

AUGUST 1951

Vol. 25

No. 9



INTERESTING ANGLE OF THIS PICTURE, taken by a member of the press crew
into National Container Corp., Mill, Jacksonville, Florida. Photo
by D. J. Britt, Jr., Personnel Mgr. of the mill.



CONSISTENT EXPANSION

PUGET SOUND

**FOR SHIPPING CONTAINERS
THAT GET ATTENTION
ALL THE WAY TO THE POINT OF SALE**

COLORED LINER BOARD

made with

National Aniline
PAPER DYES

Colored Liner Board costs little, adds a lot:

- ✓ Three-color effects with two-color printing
- ✓ Instant identification in the warehouse
- ✓ Simple "coding" for "families" of products
- ✓ Extra eye-appeal for retail aisle-displays

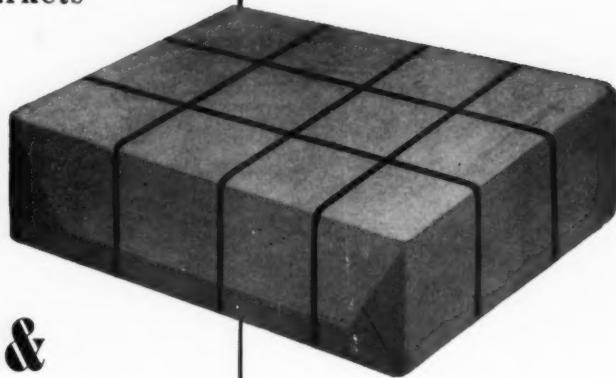
For practical, in-the-mill help on low-cost methods of coloring liner board, call upon National Technical Service.

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N.Y.
Boston • Providence • Philadelphia • Chicago • San Francisco
Portland, Ore. • Greensboro • Charlotte • Richmond • Atlanta
Columbus, Ga. • New Orleans • Chattanooga • Toronto



Lyddon & Co.

**exporters of wood pulp
to all world markets**



Parsons & Whittemore

**paper exporters
wood pulp**

London
Paris
Zurich
Stockholm
Oslo
Sousse
Montreal
Buenos Aires
Sao Paulo

10 East 40th Street, New York 16, N.Y.

Over two years without down-time on press rolls!

Monel suction press rolls

- eliminate rubber covers ...
- minimize clogged holes

There's less maintenance work at a large eastern paper mill these days.

The story starts a little over two and a half years ago when the company made a replacement. For one of their regular cast suction press rolls they substituted one of welded Monel®.

Months passed! Long after the usual time for cleaning and resurfacing, the Monel roll was still in A-1 condition. **Naturally**, when the time came to order another machine, engineers specified a Monel roll.

Today, both rolls are in the same condition as when first installed. **And they have not required a single down-time for maintenance!** What's more, there has been no loss of felt life!

Here's why Monel has "made-to-order" properties for suction press rolls:

It is hard and highly resistant to corrosion. There-

fore, the rolls have remained smooth without refinishing — **even without using rubber covers when operating on high speed machines.**

And, the high "wettability" of Monel, combined with its satin-finish smoothness, permits easy flow of the stray pulp fibres through the suction holes without clogging.

The former cast rolls were $1\frac{5}{8}$ " wall thickness and the Monel rolls were made to the same specifications. However, they proved so much stronger that future wrought Monel rolls will have thinner walls. Thus, the rolls will be lighter and easier to handle.

Due to the increased diversion of the INCO Nickel Alloys to the defense program, civilian supplies are limited. But, even if you find you must wait for these metals, keep in mind their advantages in paper mill applications. For more specific information on how to solve **your** metal problems, just write, giving complete details.

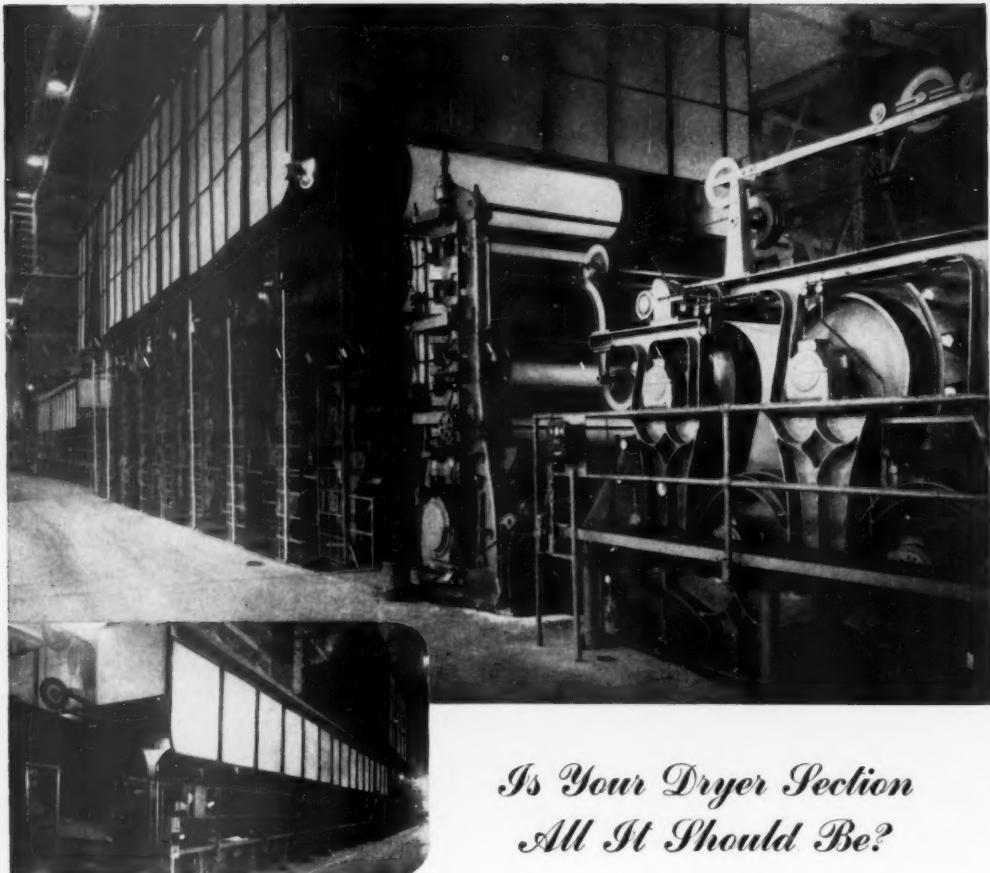


THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

MONEL

...for Minimum Maintenance

PULP & PAPER, August, 1951. Vol. 25, No. 9. Published monthly, except June, when publication is semi-monthly, at 815 Witmer St., Los Angeles 17, California, by Miller Freeman Publications. Executive, Advertising and Editorial Offices, 71 Columbia St., Seattle 4, Washington. Annual subscription \$3.00 per year in U. S. and Canada; \$4.00 for other countries. Entered as second class matter at the post office, Los Angeles, California, under Act of March 3, 1879. Postmaster: Please send Notice 3579 to PULP & PAPER, 71 Columbia St., Seattle 4, Washington.



*Is Your Dryer Section
All It Should Be?*

- Is the capacity of your dryer section adequate? Could you step up the speed of your wet end if you had more dryers?

Have you automatic transfers on your rope carriers?

Is the lubricating means automatic and leak proof?

Have you the required doctors on the wet end dryers?

How about your steamfits and syphons

—an effective drainage system?

Do you have air-operated brakes on your dryer section—remote control operation? Inchng drives?

All such features and controls are present on the more recent dryer sections built by Black-Clawson.

If required to enlarge your dryer, assign the work to Black-Clawson and include the above improvements.

BLACK-CLAWSON
HAMILTON, OHIO

Divisions: SHARTLE BROS. MACHINE CO., Middletown, O.
DILTS MACHINE WORKS, Fulton, New York
Western Sales Office: Mayer Bldg., Portland, Oregon
Southern Sales Office: 937 Coventry Road, Decatur, Georgia
Associate: THE ALEXANDER FLECK LTD., Ottawa, Canada
Subsidiary: B-C INTERNATIONAL, LTD., Greener House
66/68 Haymarket, London, S. W. 1, England

PULP & PAPER



Over the years, **SKF** engineers have worked closely with engineers and designers in every field of industry. This co-operation, this *team-work*, has helped industry minimize friction in all types of equipment from the smallest motors to the largest blooming mills. Whether you are designing new equipment or looking for efficient, economical replacement bearings, look confidently to **SKF** for expert, proved advice. Depend on **SKF** to help you put the right bearing in the right place. 7270-J



integrity • craftsmanship • metallurgy
tolerance control • surface finish
product uniformity • engineering service
field service

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.—manufacturers of **SKF and HESS-BRIGHT bearings.**

AUGUST 1951

Assures maintenance-free protection

Johns-Manville
WEATHER-PROTECTED
INSULATION

**for tanks
and vessels**



If you have outdoor—or indoor—tanks and vessels . . . such as the multiple effect evaporators shown above . . . it will pay you to look into Johns-Manville Weather-Protected Insulation.

Weather-Protected Insulation pays because it does a twofold job: 1. It provides the close temperature control so important in the process industries; 2. It assures a maintenance-free insulation job.

Basically, this Johns-Manville Weather-Protected Insulation specification consists of standard J-M Insulations over which is applied Johns-Manville Asbestocite (a tough, strong asbestos-cement sheet) to protect the insulation from the weather or from wetting due to normal plant operations. Shielded in this manner, the insulation maintains its original efficiency and requires no periodic maintenance.

If you wish, a Johns-Manville Insulation Engineer will be glad to survey your equipment and make appropriate recommendations. For further details, send for a copy of folder IN-121A. Address Johns-Manville, Box 290, New York 16, N. Y.



Johns-Manville *first in* **INSULATIONS**

LESS DOWNTIME . . .
MORE PAPER

with

ADAMS

AUTOMATICALLY FILTERED WATER



Continuous protection
for your continuous
machine operation

Higher production goals of today's faster machines must be protected—continuously. Large volumes of water, carrying proportionately larger amounts of impurities, need more attention than ever before.

Clean, automatically filtered water can eliminate down time due to plugged shower nozzles, helps avoid mid-week shutdowns for washing clogged felts.

Experience with Adams Poro-Screen and Poro-Stone Water Filters in pulp and paper mills from coast to coast has proved:

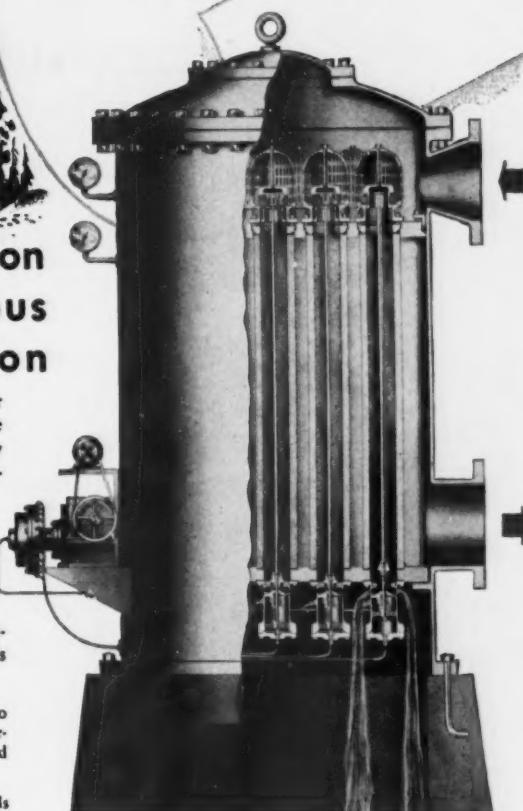
- 1 Continuous filtration can be relied upon to remove all objectionable impurities, even during seasonal conditions of highly turbid supply.
- 2 Production continues in Adams-equipped mills when others using the same water source are shut down for cleaning.

Write for your copy of the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.

R. P. ADAMS COMPANY, INC.

210 EAST PARK DRIVE, BUFFALO 17, N. Y.

AUGUST 1951





PIPING POINTERS 16-mm SOUND FILM

Free Usage for Group Training

A 30-minute motion picture that dramatizes the fundamental information in the Piping Pointers Manual. Ideal for classroom or plant training groups. Available on request through your local Crane Branch.

CRANE
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

8

Just Out!

NEW 36-PAGE
EDITION OF

PIPING POINTERS

...a bigger, more helpful
handbook for training
maintenance workers

You asked for 1/4 million copies of the last edition of Piping Pointers. You found it big help in training beginners and refreshing veterans in your piping crews. The bigger and better edition is just out—changed in appearance but not in purpose. Crane again offers this booklet—to help keep your piping systems at peak efficiency.

Piping Pointers talks facts...not theory. Thoroughly covers the fundamentals of good, sound, everyday piping practices...in easy-to-grasp, non-technical language. Its many "how-to-do-it" features are illustrated for easy understanding.

Mistakes in piping installation and maintenance cost more today. Piping Pointers can help your men avoid them. Just ask your Crane Representative for a copy.

PARTIAL INDEX TO PIPING POINTERS

HOW TO choose valves for every service...install valves...read reducing fittings...make up screwed joints...assemble flanged joints...make up solder joints...install pressure regulators...use vent and drain valves...avoid steam trap trouble...save on pipe joints and materials...handle piping tools.

PLUS THE CRANE VALVE SELECTION GUIDE

which saves time and effort in selecting valves for common piping services.

CRANE CO., General Offices:

836 S. Michigan Ave., Chicago 5, Ill.

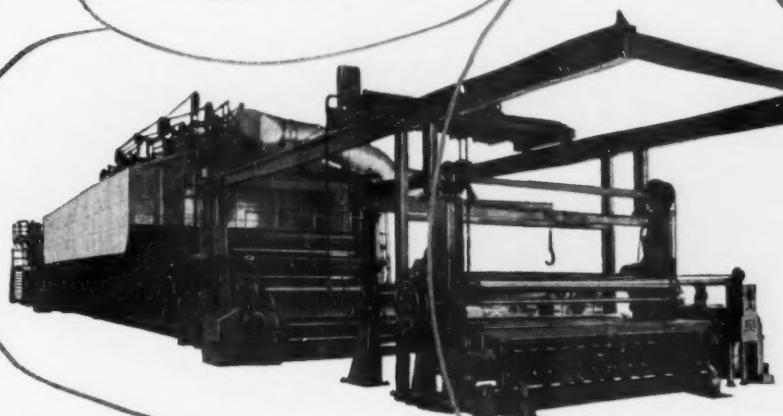
Branches and Wholesalers Serving All Industrial Areas

PULP & PAPER

PAPER MACHINES

don't

COME IN CARTONS...



Each Rice Barton machine is engineered and built to do a

specific job and to fit the requirements of space, location and production.

That's why Rice Barton machines have won so many friends in mills where costs,
quantity and quality count.

Whether you make heavy board for cartons or the fussiest, thinnest paper for radio condensers,
we would like to work out your problems with you. Please write:

Rice Barton Corporation
WORCESTER MASSACHUSETTS



**This 'dust' man can be
your best friend**

*He can help you recover
escaping Soda Ash, boost
Production Efficiency, raise
Plant-Community Relations*

If soda ash is inefficiently recovered in your plant, you're giving up a valuable material that normally should be re-used...

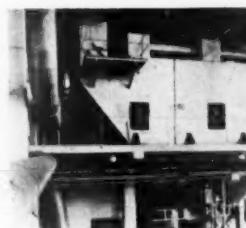
If fly ash is escaping, you run the risk of impairing product quality as well as plant-community relations.

In either case, Buell "dust" men can probably help. That's why so many plant operators include us among their very best business friends.

Buell engineers draw on more than 200 man-years of experience in the design and construction of high efficiency, trouble-free dust collectors. They can discuss hundreds of successful Buell installations. They can show how one can be designed for you.

For full information on Buell Dust Recovery and Dust Collection Systems, write today. Ask for the new, illustrated 'Dust Recovery' bulletin. Buell Engineering Company, Dept. 24-H, 70 Pine Street, New York 5, N. Y.

'SF' Electric Precipitator couples peak efficiency with peak economy in Soda Ash Collection at a paper plant.



ENGINEERED EFFICIENCY IN DUST RECOVERY

buell



HIGH-EFFICIENCY CYCLONES
ELECTRIC PRECIPITATORS
'LP' COLLECTORS
LOW DRAFT LOSS COLLECTORS
SPECIAL PURPOSE COLLECTORS
DUST HOPPER VALVES

SEMI-CHEMICAL
to solve, refining problems economically -

a large South-Eastern Mill uses

Sprout-Waldron

Refiners

Here's why S-W Refiners are preferred by mills throughout the United States and Canada:

- Flexibility of operation
- High capacity
- High pulp quality
- Ease of feeding
- Low capital investment
- Low maintenance costs
- Low plate costs per ton of pulp

✓ List of Applications

- ✓ Semi-chemical Pulping (Bleached-Unbleached)
- ✓ Pre-Refining—High Yield hot brown stock
- ✓ Kraft—Groundwood—Sulphite Knobs & Screenings
- ✓ Secondary Refining of Asplund Stock
- ✓ Bleached Soda Pulp
- ✓ Insulation Board Stock
- ✓ Hardboard Stock
- ✓ Flooring Felt
- ✓ Special Applications

**S
W**
SPROUT
WALDRON
SINCE 1866

One of the largest integrated pulp-to-container plants in the world is now building a 300 ton per day semi-chemical pulp mill, expandable to 400 tons to make .009 corrugating board for its own use. 9 Sprout-Waldron Refiners will do the pulping.

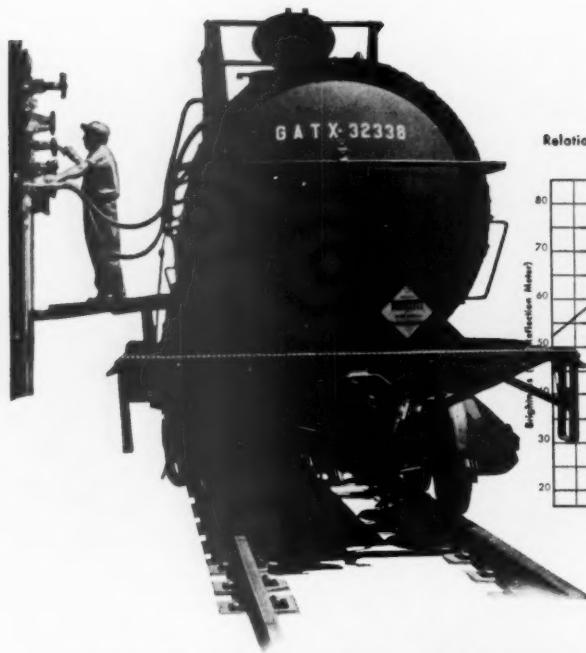
The Sprout-Waldron 36-2 Refiner is
THE SEMI-CHEMICAL PULP REFINER
It's the top producer of
semi-chemical pulp today

You can pinpoint exact pulp test requirements with the Sprout-Waldron Refiner.

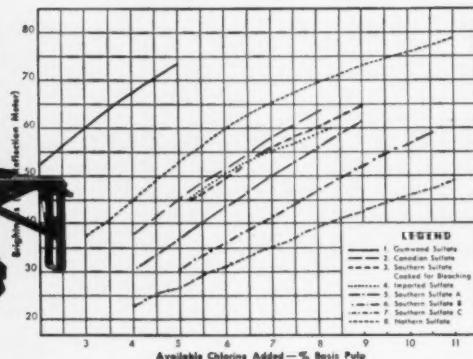
See what others are doing...your copy of our special file on successful semi-chemical pulp mills is reserved for you. Write Sprout, Waldron & Co., Inc., 32 Waldron St., Muncy, Pa.

Sprout-Waldron—
Manufacturing Engineers

MUNCY • PENNSYLVANIA



Relation of Brightness to Available Chlorine Added in Single Stage Hypochlorite Bleaching of Several Sulphate Pulps



BRIGHTNESS CONTROL begins here . . .

When you buy bleaching chemicals, don't overlook the all-important "how-to" that follows the shipment into your plant; helps you handle and use it most effectively and most profitably; saves you processing dollars; gives you the product grades you want.

Hooker Technical Service works closely with you to solve problems of handling chlorine and caustic soda in the most efficient, economical and safe manner. This assistance is based on years of service to the pulp and paper industry.

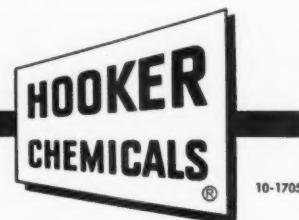
Hooker Chlorine and Caustic Soda, produced in the efficient "S" Cells at Niagara Falls and Tacoma, are well suited to your processing needs. They are shipped in properly conditioned and inspected tank cars, on carefully planned schedules that tie in with your production needs.



SEND FOR THIS HELPFUL BLEACHING DATA

Bulletin
No.

- 201 Process and Equipment for Making Bleach Liquor for Use Without Settling
- 211 Chemistry of Bleaching Chemical Wood Pulps
- 214 What Do We Know About Bleaching?
- 236 Importance of pH and Catalysts in Bleaching Operations
- 242 Production and Use of Unsettled Bleach Liquor
- 243 Procedures and Brightness Grades in Bleaching Sulfate Pulps



10-1705

From the Salt of the Earth
HOOKER ELECTROCHEMICAL COMPANY

2 UNION STREET, NIAGARA FALLS, N. Y.
NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.

SODIUM SULFIDE • SODIUM SULPHHYDRATE • SODIUM BENZOATE • CAUSTIC SODA • MURIATIC ACID • PARADICHLOROBENZENE • CHLORINE

Screw Conveyors, too, require research-engineering



Link-Belt Screw Conveyors have a multitude of applications in handling bulk materials. Here wet pulp is carried from filter to six-cell bleach chest by means of 100-foot screw conveyor using twin 9-inch diameter screws.



Helicoid or Sectional Conveyor Screws —for general screw conveyor applications; may also be furnished in the metal and finish best suited to your purpose and with components selected from the most complete line.

**We want to sell Screw Conveyors.
But more important, we want you
to get the most out of them!**

AS THE leading producer of conveying and elevating equipment, Link-Belt has developed many screw conveyors for specialized applications. That's why we offer you the widest range of types . . . in any suitable metal to meet requirements like high temperature, corrosion, sanitation, abrasion . . . in a full range of diameters, gauges, pitches.

Link-Belt Screw Conveyors are simple and compact . . . have few wearing parts. More . . . they are accurately made to insure easy assembly, smooth and continuous operation.

And here's another plus — Link-Belt can supply all of the components such as conveyor screws, collars, couplings, hangers, troughs, trough ends, flanges, thrusts, drives. Call your nearest Link-Belt office for complete information.

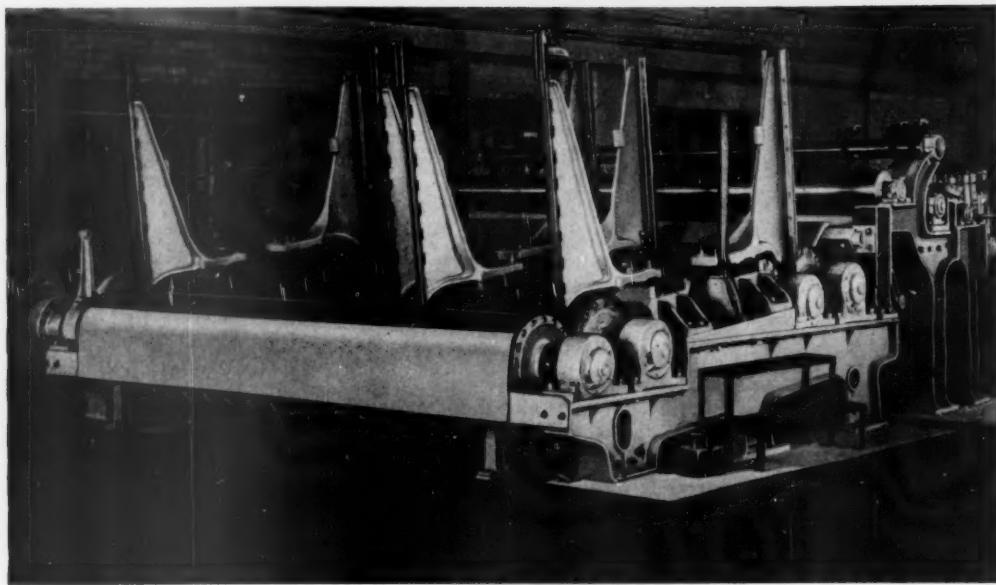
LINK-BELT
THE LEADERS IN CONVEYING EQUIPMENT
SCREW CONVEYORS

AUGUST 1951

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities.

12,340-A

NEW MOORE & WHITE 4-DRUM WINDER



HERE is an expertly engineered and precision-built heavy-duty 4-drum board winder—fast, efficient and dependable to fit the tempo of today's demands and operations. It is operated by a Moore & White mechanical drive, and all moving parts run in anti-friction bearings. It is equipped with M & W shear-cut slitters to insure clean edges to the rolls.

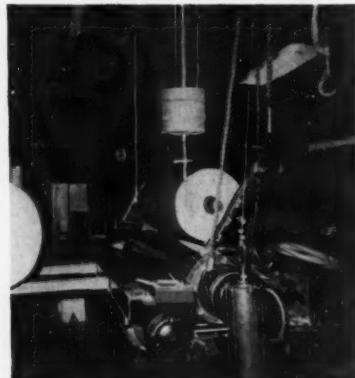
This new Moore & White winder will wind rolls up to 84 inches in diameter. It is available in widths up to the maximum requirements of modern paperboard mills. We can equip it with automatic roll ejectors which permit the completed rolls to be quickly and easily removed from the winder drums without being tended or handled by an overhead crane.

Write or call us today for more detailed information. Our sales engineers will make a prompt survey of your requirements and oversee the installation of the Moore & White winder or other equipment you need for faster, more trouble-free and more profitable operation.

The MOORE & WHITE Company
15th STREET & LEHIGH AVENUE • PHILADELPHIA 32, PA.

Represented on the West Coast by Dan E. Charles Agency,
618 Jones Building, 1331 Third Avenue, Seattle 1, Wash.

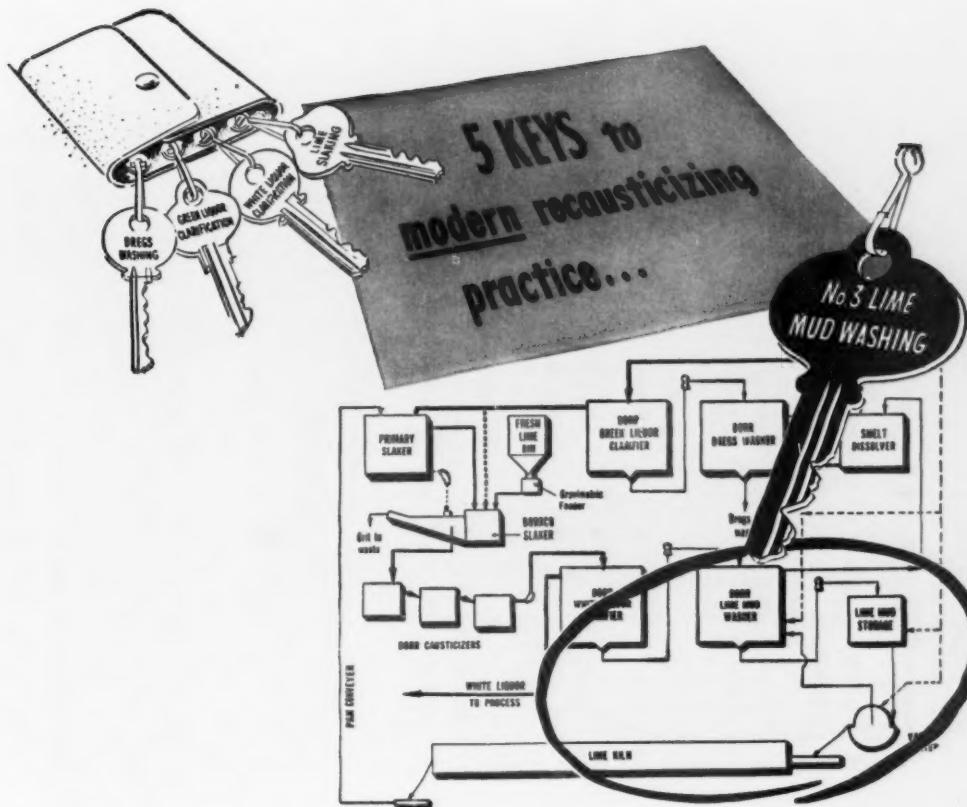
Above—Moore & White 4-drum board winder equipped with Moore & White shear-cut slitters



Above—Moore & White 4-drum winder equipped with automatic roll ejectors

**CUSTOM-BUILT MACHINES
FOR MAKERS OF PAPER
AND PAPERBOARD**

PULP & PAPER



Two stages of counter-current decantation washing of lime mud prior to filtration is now a standard design feature of the Dorr Continuous Reausticizing System. It produces a thoroughly washed lime mud which yields a filter cake feed to the kiln containing one-half of one percent soda expressed as Na_2O .

In practice this means . . .

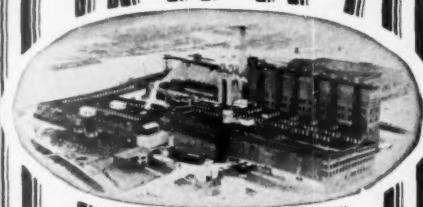
- Increased chemical recovery.
- Improved filter and kiln operation.
- Longer life for kiln linings.

Two stage mud washing is only one of the important unit operations in The Dorr System. A new bulletin, #3301, describing the reausticizing operation in detail, will be sent on request. Address inquiries to The Dorr Company, Stamford, Conn.; or in Canada, to The Dorr Company, 80 Richmond Street West, Toronto 1.



THE DORR COMPANY - ENGINEERS - STAMFORD, CONN.
Associated Companies and Representatives in the principal cities of the world

SOUNDVIEW



High Grade
**BLEACHED
SULPHITE PULP**

SOUNDVIEW PULP COMPANY
EVERETT WASHINGTON



PULP & PAPER

**No
economy sheeter
ever before
offered All
these features:**



for sheeting cellophane, waxed paper, foil and practically all types of paper . . . side run rolls . . . for converters and printers.

THE *Clark-Aiken* COMPANY
LEE, MASSACHUSETTS

**for "big-cutter" accuracy,
speed and efficiency**

- new** *Oversize Pinch Roll*, large diameter, gives more gripping surface than usual on economy cutters.
- new** *Sand-Blasted Draw Roll*, a Clark-Aiken innovation, greatly reduces possibility of slippage.
- new** *One-Piece Knife Assembly* — bed knife and cylinder housings cast in one piece to prevent strain on knife cylinder bearings when squaring sheet.
- new** *Lifetime Tapes*, a Clark-Aiken innovation, 3" wide and much heavier, last indefinitely, stretch less.
- new** *Ratchet Tape Tension Adjustment* of both top and bottom tapes — fast, positive. No bolts to loosen.
- new** *Scale Slitter and Jogger Adjustment* for positive, accurate alignment without use of tape measure.
- new** *Independent-Motor-Driven Cam-Operated Joggers* with oilite bearings for smooth, quiet operation.
- new** *Fully-Automatic Lowering System*. No worn or bent screws. Faster return.
- new** *Low Overall Height*—only 54"—permits access to most parts from the floor.
- new** *Unit Design* of cutter, delivery and layboy coordinated for unit operation. Heavy cast end frames with large-section rolled steel shapes and anti-friction bearings throughout for smooth, vibrationless operation and sustained accuracy.

**plus these preferred
Clark-Aiken features**

Patented scissors-action "Spiral Shear" Cylinder Knife; Infinite Sheet Length Range within cutting cylinder capacity; Infinite Paper Travel Speed, 0 to 800 feet per minute; Straight-Line Shearing with squaring at same angle as paper travel; Pre-Loaded P. I. V. Knife Cylinder Drive for sustained sheet length accuracy; Ball-Bearing Shearing Type Slitters; *Adjustable-Speed Take-Off Tapes; Adjustable Tape Grip.

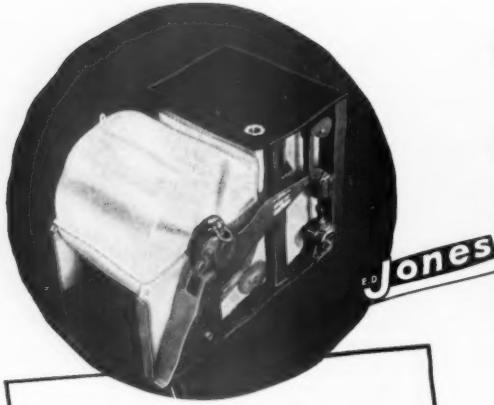
*With overlapping delivery system.

Simplex Style only, 36" to 100" maximum width capacity, with standard 18" knife cylinder or 12" cylinder for short sheets. Can also be equipped with adjustable lead-in rolls to remove curl and wrinkles, motorized pile return, electronic register cut-off and overlapping delivery system. Write for bulletin D.

**new
overhanging type
layboy**

available for all Clark-Aiken Cutters, permits side pile removal, greater pile height, fast skid removal and replacement, fast return.

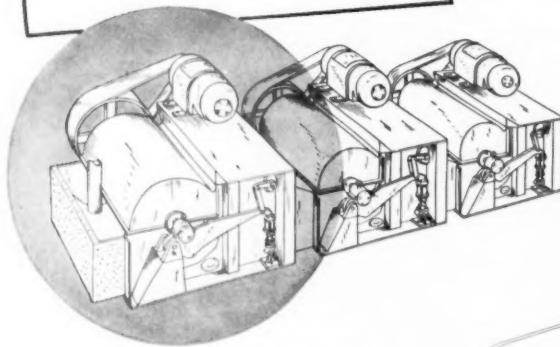




**NOW — get up to 65%
power savings with
this pre-assembled
BEATING UNIT**

(Pat. applied for)

More refining capacity — up to twice as much as any similar machine
Positive control of roll pressures — no possibility of untreated stock passing through unit
Greater flexibility of operation
Fully automatic control
Proved mechanical design
Lower installation cost — no assembly in the mill
Simpler floor construction — minimum floor loads, no shifting loads
Requires less floor space — motor support is an integral part of the unit
Lower maintenance — completely non-corrosive where exposed to stock



TUB INSTALLATION for Batch Beating

The Jones Beating Unit also offers special advantages for conventional tub installation: low installation cost — complete unit comes ready for installation with no assembly necessary at mill; floor space savings — motor support is right on the beating unit; greater rigidity and accuracy — because of the short spindle length; lower maintenance — unit is completely non-corrosive where exposed to stock.

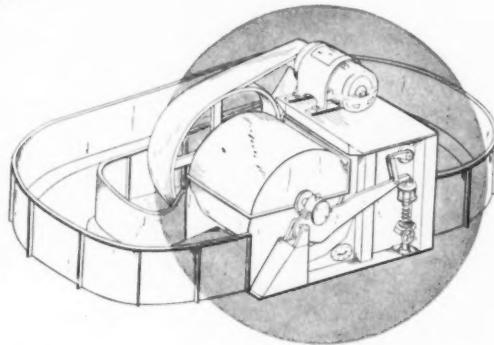
This complete, packaged Beating Unit — as simple to install as a Jordan — produces better quality, more uniformly refined fibre, at *lower cost per installed horsepower, lower cost per unit of refining capacity*, than any conventional beater.

Backed by the engineering skill and experience that produced over 150 Jones-Bertrams Patent Beaters, this new unit embodies features never before incorporated in one machine . . . features of design, control and operation which can mean up to 65% power savings for you.

*Write today for details, or ask
your Jones representative.*

MULTIBEATER for Continuous Operation

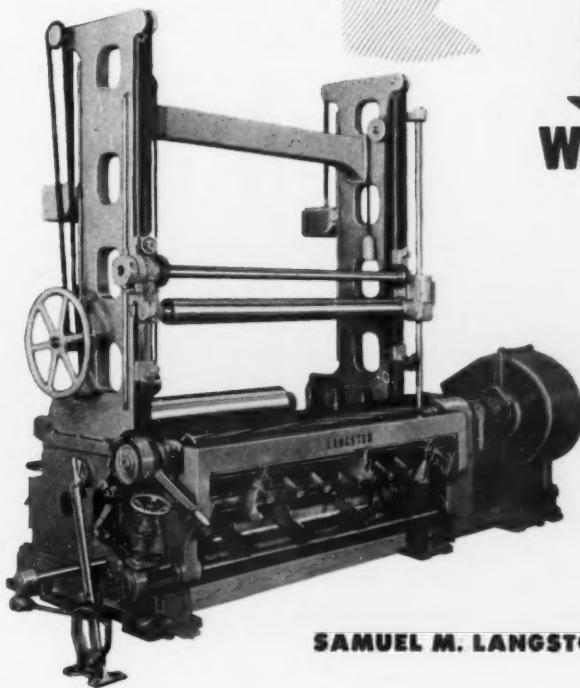
As shown in this illustration, the Jones Beating Unit can be installed in a Multibeater set-up for continuous operation. Positive control of re-circulation and roll-pressure on the Jones-Bertrams type rolls and bed-plates makes it impossible for untreated stock to pass through the unit. Any roll in the Multibeater may be by-passed, when desirable for any reason, without shutting down the group.



E.D. Jones

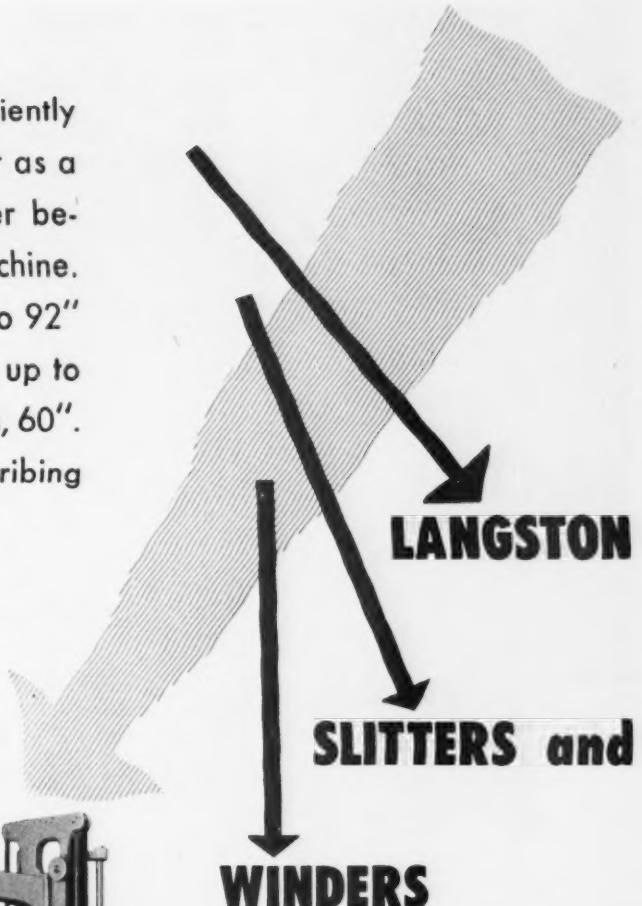
E. D. JONES and SONS COMPANY • PITTSFIELD, MASSACHUSETTS
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

Here's a machine sufficiently heavy to be used either as a Rewinder or as a Winder behind a paper or board Machine. Built in widths from 62" to 92" and to handle diameters up to 50", or on special orders, 60". Ask for Bulletin 204 describing other sizes.



SAMUEL M. LANGSTON COMPANY, CAMDEN, N.J.

AUGUST 1951





FELTS THAT LAST SAVE MONEY, INCREASE OUTPUT

You'll find Nopco Syntergent® K felt washing compound an exceptionally effective felt preserver. We have called upon our wide experience as a leading supplier of textile chemicals, and our close association with the actual problems of producing good felts for the paper maker, to formulate a compound that does an outstanding felt cleaning job . . . that helps to reduce equipment costs and increase production. (Remember: Clean, well cared for felts can actually increase output by as much as 5 per cent.)

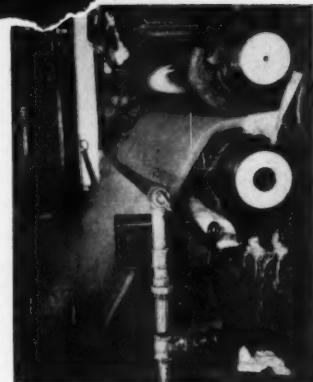
Syntergent K mixes readily with warm or cold water in all concentrations, to provide solutions which give copious and persistent lather and have excellent detergent and wetting characteristics. It

is stable to both mild alkalis and acids, and thus can be used with either an alkaline or acid wash. It is likewise compatible with soap solutions.

You'll find Syntergent K very effective, also, for wetting out and conditioning brand new felts.

We shall be glad to supply you with formulas for *on-machine* and *off-machine* washing of press felts, wet felts and new felts. Our Technical Service Division stands ready to assist you *in your mill*, to make sure you obtain the best results as economically as possible.

Used in conjunction with soda ash, Syntergent K is ideal for cleaning vats, piping systems and screens during grade changes.



After running felt 10-15 minutes, fresh water showers carry away embedded soil in less than 5 minutes. The Syntergent K washes out freely and completely.



NOPCO CHEMICAL COMPANY

HARRISON, NEW JERSEY

Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

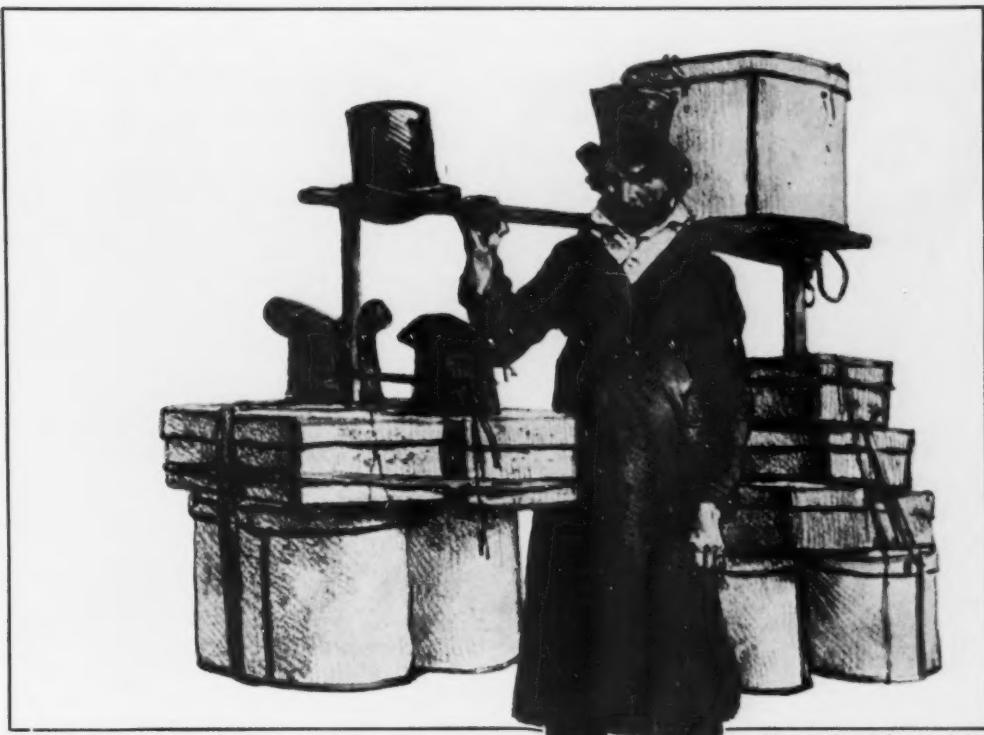


Illustration from the Bettmann Archive

Paperboard Salesman— Model 1810

The French, mindful of their finery, were the first to fashion sturdy boxes of paperboard for ladies' and gentlemen's hats. Built up by hand from multiple layers of paper, the board was shaped and moulded into boxes, some of them finished with a plain glazed surface, some with decorations. Then the salesman with his loaded display of paperboard boxes would call his wares through the streets of Paris.

Hat boxes, not much changed in design after 140 years, are still widely used for millinery and

men's hats. But the once precious paperboard, now produced by modern high-speed methods, low in cost and plentiful, today protects just about every commodity used by business and the home. For packaging, for shipping, for sanitary protection, for display, for convenience, paperboard cartons and containers are the indispensable carriers of modern merchandise. No wonder paperboard accounts for nearly one-half the total production of the American pulp and paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper—Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

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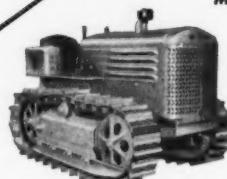


Model "77"—39 h.p. Gas

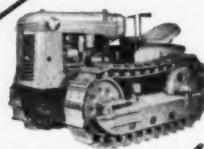


Model D—61 h.p.
Gas or Diesel

Model "88"—45 h.p.
Gas or Diesel



Model A—30.5 h.p.
Gas or Diesel



Model OC-3—22 h.p. Gas



Model B—38 h.p.
Gas or Diesel

Model FDE—110 h.p. Diesel

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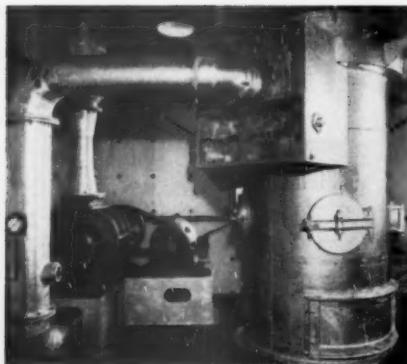
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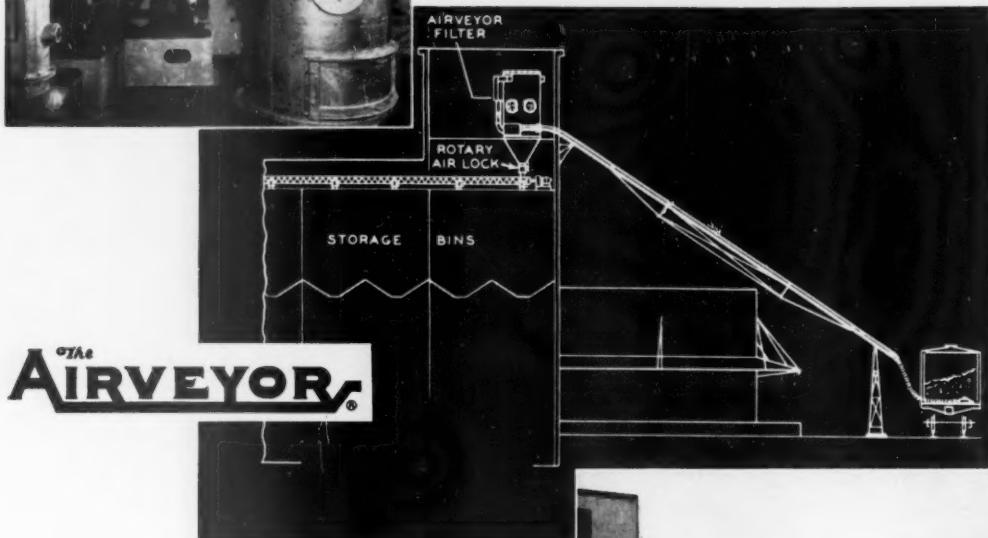
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Air in motion has enormous carrying capacity. When it's controlled, air supports and transports clay or any dry pulverized material, at a high rate of speed, to any pre-determined point.

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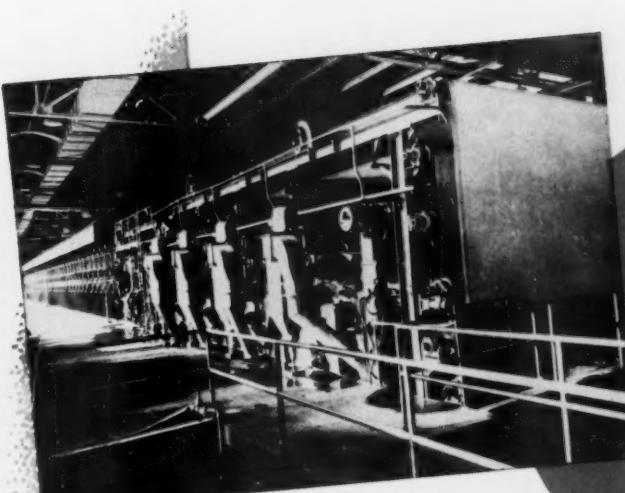


engineer will analyze your present conveying system and show you how the Airveyor can help in your operations.

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A-125



Alton's No. 3 machine, world's record strawboard producer. Photo courtesy of Alton Box Board Company, Alton, Illinois.

Nalco
3-WAY
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at Alton Box Board Company

HERE are the three water treatment services performed by Nalco at Alton Box Board Company, Alton, Illinois. In addition, experimental work on process waters using Nalco anti-foam chemicals is now being done at Alton:

1 SLIME CONTROL chemicals, fitted to Alton Box Board requirements, help maintain high quality . . . prevent slime spots and breaks due to slime.

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Use of Nalco Chemicals and Services at Alton Box Board Company shows clearly the wide extent to which good water treatment, properly applied, can be utilized to make over-all mill operation cleaner, more efficient and more economical.

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CHEMICAL USERS' GUIDE

To General Chemical Products for the Paper Industry

| PRODUCT | AVAILABLE FORMS | COMMERCIAL STRENGTH (MIN.) | SHIPPING CONTAINERS | APPLICATIONS |
|---|---|---|--|---|
| Aluminum Sulfate $Al_2(SO_4)_3 \cdot 14H_2O$ approx. (Alum) | Commercial & Iron Free: Lump, Ground Powdered | 17.25% Al_2O_3 | Bags Bulk Carloads | Precipitation of resin size and filler; water clarification; manufacture of satin white; pitch control; mordant for dyes. |
| Aluminum Sulfate $Al_2(SO_4)_3 + water$ (Liquid Alum) | Liquid | 32° Be (total Al_2O_3 7.2%) | Tank Trucks Tank Cars | Same as commercial dry product but lower strength. |
| Salt Cake Na_2SO_4 (Sodium Sulfate) | White or Grayish Granules | 95-99% Na_2SO_4 | Bags Bulk Carloads | Used in kraft cooking liquors as the source of Na_2S . |
| Glauber's Salt, Crystal $Na_2SO_4 \cdot 10H_2O$ (Sodium Sulfate) | Colorless Crystals | 96% $Na_2SO_4 \cdot 10H_2O$ (42.3% Na_2SO_4) | Bags Barrels Fibre Drums | Substitute for salt cake in kraft cooking liquor. |
| Glauber's Salt, Anhydrous Na_2SO_4 (Sodium Sulfate) | White Granules | 99.5% Na_2SO_4 | Bags Bulk Carloads | Same as Crystal but stronger product. |
| Sulfuric Acid H_2SO_4 | Liquid | 66° (93.19%), 99% 20% oleum and higher strengths | Carboys Steel Drums Tank Trucks Tank Cars | Wire souring; parchmentizing; acid wash in last stage of multi-stage pulp bleaching; neutralizing tall oil soaps. |
| Sodium Thiosulfate $Na_2S_2O_3 \cdot 3H_2O$ (Hypol) | Colorless Crystals | 99.75% $Na_2S_2O_3 \cdot 3H_2O$ | Bags Fibre Drums | Anti-chlor. |
| Sodium Sulfite, Anhydrous Na_2SO_3 (Sulfite) | White Powder | 98.5% Na_2SO_3 | Bags Fibre Drums | Anti-chlor. |
| Sodium Silicate $Na_2O \cdot XSiO_2 + water$ (Water Glass) | Liquid | 38°, 41°, 42° Be; special and higher strengths | Steel Drums Tank Cars Tank Trucks | Adhesive for corrugated and solid fibre board; used in coating mixtures to reduce viscosity and in beater sizing to stiffen paper. Aid in bleaching & flocculation. |
| Chromium Potassium Sulfate $K_2SO_4 \cdot Cr_2(SO_4)_3 \cdot 24H_2O$ (Potash Chrome Alum) | Red Violet Crystals | 99.5% $K_2SO_4 \cdot Cr_2(SO_4)_3 \cdot 24H_2O$ | Fibre Drums | Used in "save-all" or white water systems. |
| Aqua Ammonia $NH_4OH + water$ (Ammonia) | Colorless Liquid | 26° Be (29.4% NH_3) | Carboys Steel Drums Tank Trucks | Used with chlorine to form chloramines for slime control. |
| Sodium Fluoride | Powder | 90% NaF 95% NaF | Fibre Drums | Preservative and stabilizer for starch in coating mixtures. |
| Tetrasodium Pyrophosphate, Anhydrous $Na_4P_2O_7$ (TSP) (Pyro) | White Powder | 98% $Na_4P_2O_7$ (Equiv. 52% P_2O_5) | Bags Fibre Drums | Felt washing; pitch dispersion. |
| Nitric Acid $HNO_3 + water$ | Liquid | 42° Be 67.2% HNO_3 | Carboys Drums Tank Trucks | Nitrating pulp; cleaning metal. |
| Sodium Sulfide $Na_2S + water$ | Red Chips or Solid Mass | 60% Na_2S | Steel Drums | Substitute for salt cake in modified soda process. |

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.

OTHER PRODUCTS: Hydrochloric Acid; Sodium Metasilicate; Trisodium Phosphate; Copper Sulfate; Disodium Phosphate.

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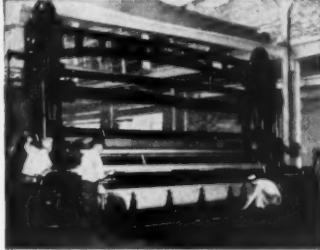
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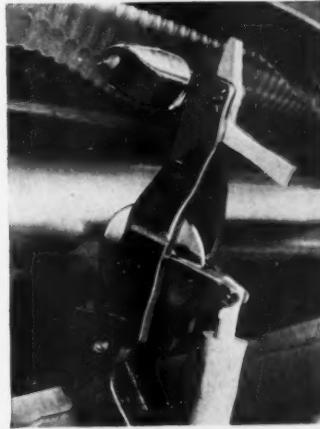


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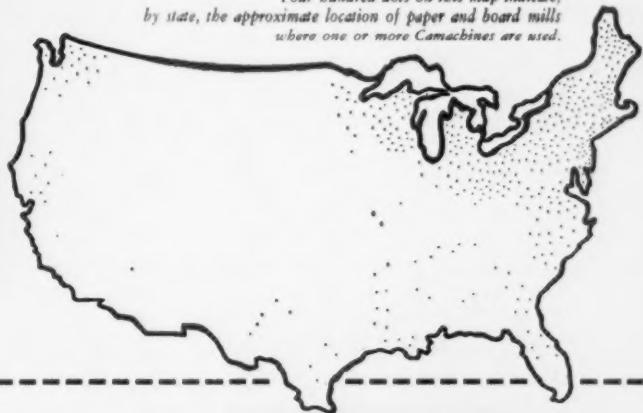
CAMACHINES EVERYWHERE! More than 400 paper and paperboard mills in the United States alone have one or more Camachines in service. More paper of all types is processed into rolls on Camachine equipment than on any other type of slitting and winding machinery.

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Four hundred dots on this map indicate, by state, the approximate location of paper and board mills where one or more Camachines are used.



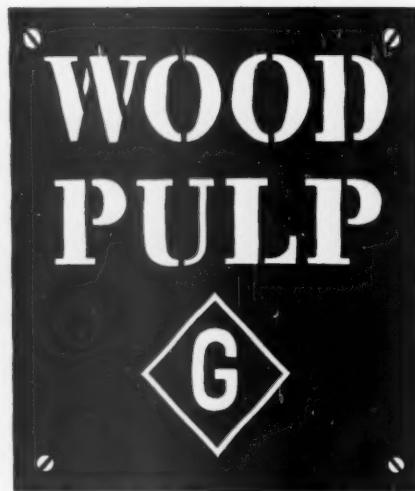
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AUGUST 1951

27

Established 1886



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This unceasing desire to make a better product today and an even better one tomorrow has been the mainspring in the achievements of the American Pulp and Paper Industry.

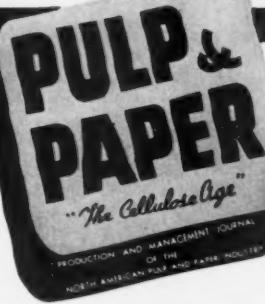


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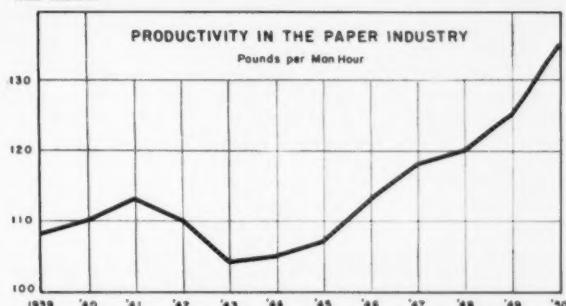
The Trend Is Always Upward

The American Paper and Pulp Association has brought out graphically and vividly in the chart below that the line of growth of this industry is steadily upward over the long span of years, regardless of any temporary dips, as were recorded in 1942 and 1943.

Thus it is demonstrated that this is one of the most dynamic of all modern industries, inevitably growing as civilization advances and literacy increases, and the full flowing of the Cellulose Age is still ahead of us.

Said the APPA:

"With over 2,400,000 tons another monthly record for production of paper and board (for the U.S.) was set in May, according to our preliminary estimates. Production for the first five months on this basis was 11,448,644 tons; almost the same production was made in the first six months of last year. A rate safely over 27 million tons annually has already been attained. One is prompted to stand in awe at these giant strides of production when we recall that in 1949 the U.S. production was but 20,300,000 tons, and that ten years earlier, in 1939, a record production of 13,500,000 tons was made!"



Pocket Size Directories for South and Far West

PULP & PAPER is pleased to announce two new publications now off the press—its first directory of mills in the Southern States and a new Pacific Coast issue.

Both are pocket-size volumes, crammed-full with valuable information on personnel and other facts concerning the pulp and paper mills in those two important producing regions, independently gathered by the PULP & PAPER's staff.

Price of either director with one year's subscription to PULP & PAPER—\$5.50 (without subscription, \$3.50 for one, \$6 for both).



PULP & PAPER circulates all over the world.

It is read in virtually every pulp and paper company office and mill throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand. It is read in many other offices and mills in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Holland, Czechoslovakia, Italy, Spain, Switzerland, Soviet Russia, Poland, Yugoslavia, India, Pakistan, Israel, South Africa, China, Japan, Formosa, both near and far around the world, where pulp and paper are made.

Louis Bloch—His Personality an Asset

A most valuable and instructive link with the pioneer days of Pacific Coast papermaking was snapped when Louis Bloch, 75, chairman of the board, Crown Zellerbach Corp., died in San Francisco, as we reported in our last issue.

Mr. Bloch was one of the founders of the industry on the Pacific Coast, having started in a small bag factory of the Crown Paper Co. in San Francisco in 1894. By 1895 he had become superintendent and his climb upward was steady thereafter.

He was instrumental in bringing together the various companies finally merged into Crown Zellerbach Corp., and the "Crown" part of that combination was, in a manner of speaking, virtually synonymous with his own name.

Even in his 70's, Mr. Bloch was an inspiration to employees who saw him energetically climbing to the top of digester houses and into every corner of a mill on his inspection trips. One of our most recent and lasting memories of him will be the evening, at a mill employees' dinner, when he tore a set, written speech into bits of paper and launched into an extemporaneous down-to-earth talk that was one of the finest exhibitions of good management-employee relations. He proved many times that industry's greatest asset is in the personal character, the human traits and attractive personalities of some of the men who head it. Industry needs men like Louis Bloch.

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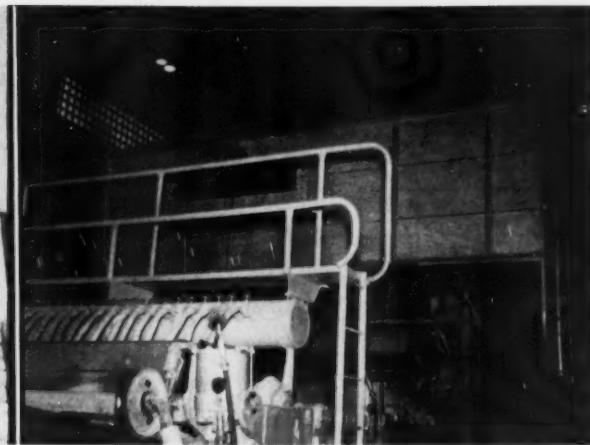
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IMPROVEMENTS AT SCOTT MILL

NEW NO. 17 MACHINE AND A WACO FILTER



NEW RECOVERY TOWER at Scott Paper Co., Chester, Pa. Note water tower at top, masquerading as Scottissue roll, which might be destined for Paul Bunyan. The pulp on deck in foreground is both Scandinavian and domestic.



THE FLYING SCOTT—new \$5,000,000 No. 17 Machine at Chester, Pa., built by Beloit. Started up this year. Because of special features, this view of headbox is all of it that PULP & PAPER could take.

With the specific accolade of Pennsylvania's "Clean Streams Program" of the Sanitary Water Board, the latest installation in Scott Paper Co.'s waste water treatment at Chester, Pa., has been in operation several months and now is definitely in the category of practical mill-tested stream improvement methods. Featured at 1951 Paper Week (page 98, April PULP & PAPER), it consists of a battery of four Waco filters, this multiple unit installation being the first of its kind in the U.S. Others have since been made.

Growing from experimentation for a year's period with one pilot filter of the same design, the quadruple installation reclaims 95% of the pulp fibers from waste waters filtered by the system. Viewing the installation for its readers, PULP & PAPER was told by Scott officials that the Chester mill, operating around the clock seven days a week, produces about five million gallons of water every 24 hours. All these waters, carrying fibers unrecovered by paper machine save-alls and similar equipment, were once discharged into the Delaware River direct.

Installations already completed in Scott's wide water improvement program have cost \$800,000 and handle about one-half of the waste waters. Plans are under way to take care of the remainder of the total effluent, and, because of factors dissimilar from those in the waste waters passing through the Waco filters, a flocculation system will probably be chosen, providing materials are available. The remaining waste waters contain floor drain wastes and carry, in addition to fibers, other miscellaneous materials which cannot be re-utilized in the paper mill as can, of course, recovered fibers from the filters.

The Waco filters in effect serve as a final mop-up after initial recovery of fibers in save-alls and other equipment. They are in a new and separate steel and tile construction building 95 ft. long and 45 ft. wide. To hook up to the filters a part of the mill drainage system was re-styled and an overhead flume and pumps installed to carry waste waters to the new building.

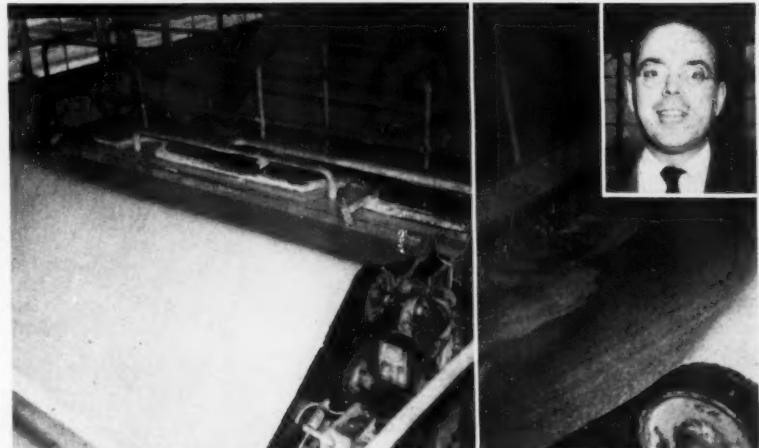
The filter drums, shown partially in the illustrations, are 14 ft. wide and 6½ ft. in diameter. Each filter contains a fine mesh wire screen upon which is placed ordinary paper mill furnish. The furnish itself acts as the medium by which the fibers are

filtered. Both the filtering furnish and the fibers removed are returned to the paper-making processes. Naturally Scott's operations have been of extreme importance and value in cleaning up the lower Delaware since it is a foremost manufacturer of tissue and towels running at vastly expanded capacity.

No. 17 Machine In Operation

Among other improvements at Chester is the new office building to be ready for occupancy this summer. Recently completed is another new structure which houses the No. 17 machine, the new "Flying Scott,"—a five million dollar machine—which, however, doesn't represent

TWO VIEWS OF WACO FILTER at Scott Mill in Chester, Pa., which reclaims 95% of fibers from waste waters. Inset—DAVID WADLEIGH, of Scott Technical Staff, son of George Wadleigh, widely known industry engineer. The Waco filter at Chester was the former's "baby." It is only half of Scott's eventual stream improvement program—the rest is coming.



the company's first pioneering in important papermaking innovations. The No. 15 machine, for example, a few years ago had attached to its wet end the first stainless steel headbox.

Scott operations at Chester have expanded steadily since establishment of the plant in 1910. In addition to physical plant improvements at the several Scott mills and plants throughout the country, the company has in recent months acquired additional pulp sources by bringing into the Scott lineup two relatively small pulp mills, as well as increased capacity at the Brunswick, Ga., mill in which the company owns a half interest with Mead Corp.

A proud Scott boast is that the company has not laid off an employee in 29 years due to lack of orders for Scott products.

Scott made capital expenditures totaling about 10 million last year, all for additions and improvements to facilities and subsidiaries. The major part went to Chester, and in addition to the equipment described above, included a new shipping and storage center 400 by 180 feet with loading platform for 16 cars and eight motor trucks. This includes a conveyor system with electric eye to select cases for shunting into various cars. The four story office building will be completed this summer. A million of the capital outlay was for improvements which in 1949 and 1950 increased the production of eight tissue machines by 16 percent. This increase, said Scott officials, was the equivalent of the output of a new paper machine—but was acquired at an outlay of one million dollars whereas today such a machine with installation would run at least \$2,750,000.

Scott is already on war work. Two special machines at Marinette, Wis., have been returned to packaging K-ration toilet tissue, and two more such machines have been installed at a Marinette subsidiary. Standard products of Scott are of course going in some measure to government agencies and military.

The Brunswick, Ga., pulp mill, already mentioned above as owned 50-50 with Mead, invested \$400,000 on additional pulpwood source, and \$5,250,000 to finance a recent improvement program.

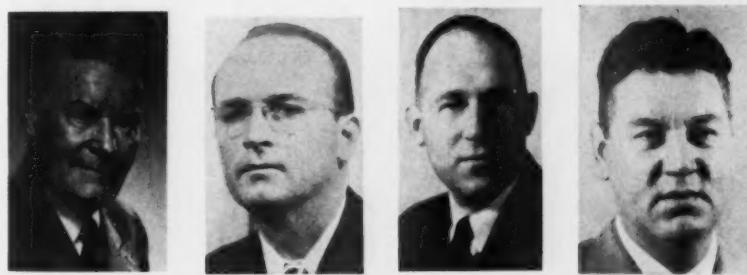
Blancke is Married

Harold A. Blancke, president of Celanese Corp. of America, parent firm of Columbia Cellulose Co., Watson Island, B.C., was married June 21 to Miss Elizabeth J. McGinnis, of New York. His age was given as 46; hers as 45. Their home is at Amityville, Long Island. She had been nurse to the late Virginia Blancke, his first wife, during her last illness early this year.

New Box Plant For National Container

A new corrugated paper box factory for National Container Corp., its 12th such plant, is planned for Milwaukee, Wis. The new unit of 100,000 square feet in a one-story building will be completed by the end of 1951.

RAYONIER MANAGEMENT



RAYONIER INCORPORATED, producers of wood cellulose for rayon and cellophane, announced management changes last month which brought these four gentlemen into top key posts (l to r): WILLIAM A. PARKER, of Boston, elected Chairman of the Board; JAMES T. SHEEHY, elected Vice President in Charge of All Operations; WILLIAM E. BREITENBACH, Vice President in Charge of Northwest Mill Operations, and RUSSELL F. ERICKSON, Vice President in Charge of Southeast Mill Operations.



JUST AS WE WENT TO PRESS—election of CLYDE MORGAN (in picture), Pres. of Eastern Corp., of Maine, as new PRESIDENT of RAYONIER. Years ago he was a v.p. of Rayonier.

The board of directors of Rayonier, Incorporated, last month made several important management changes and increased the board membership from 11 to 13.

The four new directors, replacing Norman W. Wilson and Donald S. Leslie of Hammermill, who resigned after disposing of interests, are William Tudor Gardiner, former Governor of Maine; Junius A. Richards, partner in Whitney H. N. Goadby and Co., New York; Arthur Ross, vice president of Central National Corp., New York; and Ira D. Wallach, a vice president of Gottesman & Co., Inc., New York.

William A. Parker, president of Incorporated Investors, Boston, and a director of Rayonier since 1946, was elected chairman of the board, replacing Charles R. Blyth, president of Blyth & Co., Inc., San Francisco, who continues as a director. Mr. Parker was also elected chairman of a newly constituted executive committee of which the other members are Morton H. Fry and D. Samuel Gottesman, both of New York.

William G. Reed, of Seattle, a Rayonier director, who has been functioning as the company's chief operating executive pending selection of a new president, resigned his interim position of executive vice president. Incidentally, he also resigned as president of Simpson Logging Co., which has a fiberboard division at Shelton, Wash., and was succeeded in that position by Thomas F. Gleed, Seattle bank president.

Sheehy Heads Operations

Mr. Parker later announced that James T. Sheehy, vice president of the company

since early 1950 and in its employ since 1933, had been elected vice president in charge of all operations. It is expected that he will move from Hoquiam, Wash., where he was resident manager, to the executive offices in New York.

At the same time it was announced that William E. Breitenbach and Russell F. Erickson, vice president of the company, will be in charge of mill operations; Mr. Breitenbach of those in the Northwest and Mr. Erickson of those in the Southeast.

Mr. Sheehy joined Rayonier in June, 1933, immediately following his graduation from the University of Washington with a degree in chemical engineering. He was employed at the Grays Harbor plant in Hoquiam until his transfer in 1939 to the company's plant at Fernandina, Fla. In 1940 he became chief chemist and in 1945 resident manager. On Jan. 1, 1948, Mr. Sheehy was transferred to New York in a liaison capacity. In 1949 he was transferred to Grays Harbor as manager, in April, 1950, he was elected vice president.

Mr. Breitenbach has long resided at Port Angeles and was a founder of Pacific Coast TAPPI. He was in the first classes at the Institute of Paper Chemistry in Appleton, Wis., and joined Rayonier as technical director at Shelton, Wash., advancing finally to manager at Port Angeles. Mr. Erickson hails from the University of Minnesota and was a prominent engineer in the southern kraft industry.

Memphis Mill Increase

Following defeat of the CIO Textile Workers in an employee election, the AFL Pulp Workers and Paper Makers unions reached a new agreement with Kimberly-Clark Corp., Memphis, Tenn., paper mill, providing a general wage increase of 7% and minimum of 10 cents per hour, retroactive to Oct. 2, 1950. Minimum for men is \$1.29; for women, \$1.19. Hospitalization and surgical insurance and other benefits are provided.

Georgia Tax Ruling

Corporations domiciled outside of Georgia but maintaining regional offices there, such as in Atlanta, won an important court decision when the Georgia Supreme Court ruled that sales made through Atlanta offices in other Southern states did not constitute "business in Georgia" and hence were exempt from application of the state income tax law.

A VISIT TO COLORADO

BIG BEETLE BATTLE CAN BE WON MILL PROMOTERS EXERCISE OPTION

A PULP & PAPER staff editor touring in Colorado this past month to bring a first hand report to readers of the mill project there, learned that an effective chemical means of controlling the widespread bark beetle infestation of U. S. Forest Service timber in that state has been worked out, but at a cost of \$3,000,000 so far, and with two years more of work ahead.

Also, he learned that directors of the Columbine Development Co., promoters of the projected bleached kraft market pulp mill based on use of beetle-killed timber, recently voted to exercise their option on a 176-acre site selected for the mill-to-be at Newcastle, Colorado. The PULP & PAPER editor, who made an extensive tour of the State, said the site chosen seems to be well-suited for a mill, being on a gradually sloping hillside on a bank of the Colorado River, about 130 miles west of Denver. It is near much of the beetle-killed Forest Service timber in White River National Forests.

He found the Colorado promoters of the project were encouraged in efforts to raise capital as a result of the 65% tax write-off which, as we reported last month, has been granted by the Defense Production Administration.

PULP & PAPER was assured in Denver that an established pulp brokerage house is interested in the project and will market the pulp if, and when, the mill is built. Promoters already have invested \$100,000 as a down payment on some 4,500,000 cords of U. S. Forest Service timber, purchased at auction. The certificate award was expected to facilitate raising the required showing of \$10,000,000 toward construction and timber purchase required as the next step in the Forest Service purchase agreement.

While efforts to get Rocky Mountain newspapers to back a newsprint mill have failed, the instigator of that scheme, Preston Walker, manager of the Grand Junction, Colo., *Sentinel*, is still personally interested, and is president of Columbine. One of its leaders, Jess Root, of Denver, could not be reached in Denver, as it was understood he has worked so strenuously on the project, that he found it necessary to take a rest.

At the Forest Service Regional office in the Post Office Building, Denver, C. P. Brown is assigned to planning the beetle control project along with Paul McCord. Paul H. Roberts arrived in Denver as project director.

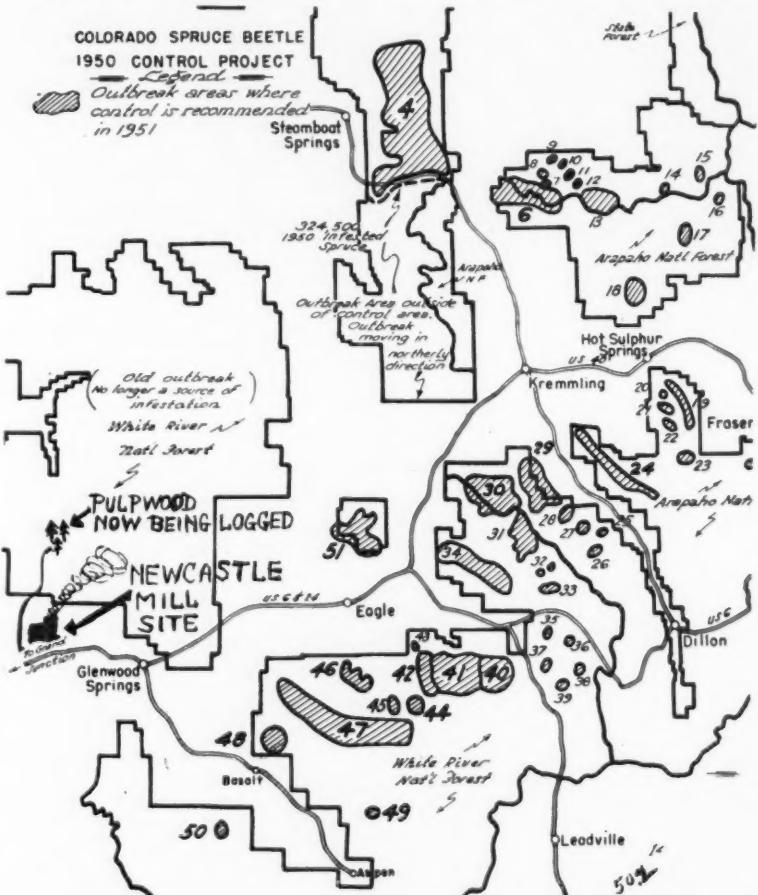
Quite a bit of the beetle-killed timber is now being shipped, and has been for a couple of years, to Consolidated Water Power & Paper Co. of Wisconsin Rapids, Wis., who some time ago negotiated a contract with the Forest Service for some of the beetle-killed timber in an area central to the largest block of infestation. The logs are cut into 8-ft. lengths to fit

crosswise in gondola cars and are successfully shipped to the Lakes States, where they prove entirely acceptable in the production of pulp, particularly when chips are mixed with those of green wood.

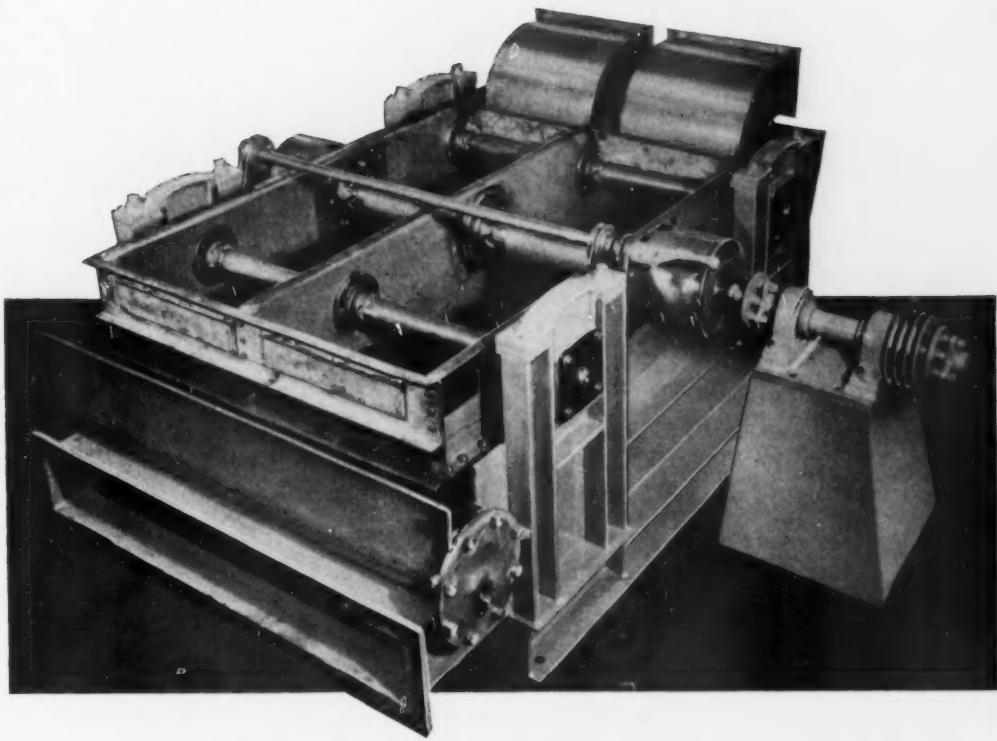
Worst Insect Raid in History

This is said to be the worst forest in-

festation in U. S. history. Originally, most of the damage was done on the Grand Mesa and White River National Forests in Colorado, although the Gunnison, Routt, Uncompahgre, and Arapaho have also suffered heavy losses. To date, the best estimates by the Forest Service indicate a beetle kill of 4.05 billion bd. ft. (8,100,000 cords) of timber (about 11.1% of this lodgepole pine, to which the beetle turned as it eliminated the preferred host). Close to a quarter of Colorado's standing timber resources—three-fifths of



THIS MAP SHOWS THE MILL SITE at Newcastle, the pulpwood now being logged in White River National Forest and sold to Consolidated Water Power & Paper Co., in the old infestation, the areas set up by the Forest Service, etc. Denver is off to right of this map. Note the historic town of Leadville below, and of Aspen, the famous new ski resort developed by WALTER P. PAEPCKE, Chairman of the Board of Container Corp. of America. The Forest Service listed 3,325,000 cords of beetle-killed spruce and 1,240,000 cords of both live and insect-killed spruce, lodgepole pine and alpine fir included in the Pulpwood sale. Most spruce is in White River National Forest; smaller areas are in Grand Mesa, Uncompahgre and Routt National Forests.



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Jonsson Screens are rapidly becoming standard equipment ahead of brown stock washers. May we submit recommendations, layouts and estimates?

BIRD MACHINE COMPANY
SOUTH WALPOLE • MASSACHUSETTS

which is in Engelmann's spruce—is dead on the stump!

Immediately threatened are 2.2 billion bd. ft. (4,400,000 cords) of green Engelmann's spruce and almost 2 billion of lodgepole pine; potentially threatened is another 10.7 billion board feet of spruce, and almost a billion of lodgepole pine, in Colorado, Wyoming, and northern New Mexico.

An entirely effective means of beetle control, it was learned, is the spraying of trunks of individual trees with orthodichlorobenzene. The cost of treating a tree once is \$2.25, including all items, such as spray equipment, wages of the men, transportation, etc. At present the USFS has not secured an appropriation for the current year. Last year \$3,000,000 were spent on the project and it was estimated that a similar amount would be required for two years more in order to establish any kind of effective control. Colorado Congressmen were still trying to get some money through Congress and were not having a lot of success. However, it seems to be the impression that they would secure sufficient funds to carry on the work this year, although it might be handicapped to some extent by the lateness at which the money would be available.

Madison Process

The contract between the Forest Service and Columbine Development calls for the Forest Service to furnish a percentage of green timber to be mixed with the beetle-killed timber in pulp manufacture. The pulping process worked out by the Forest Products Laboratory at Madison, Wis., produced reasonably good pulp from the dead logs alone, but the addition of chips from green timber improved the tear characteristics of paper made from the pulp. This green timber will be furnished throughout the life of the Columbine contract, which is for a period of 30 years.

Regarding how long the beetle-killed timber would be good for manufacture of pulp, the Reconstruction Finance Corporation had insisted on an actual test of this point before proceeding with consideration of a loan application (granting of a DPA certificate canceled this application). From an area in Utah, where a beetle infestation occurred 26 to 30 years ago, a quantity of Spruce timber similar to that in Colorado, and from similar elevation, was tested and the pulp manufactured from them was reported "excellent."

If the pulp mill project goes through, and it now appears certain that it will, according to Denver Forest Service officials, all of the present killed timber, or that which will be killed before the USFS secures control, will be salvaged and utilized. Obviously, the 30-year life of the contract contemplates that there will be substantially more beetle-killed timber available than now exists.

Contract with Ebasco

The Columbine Development Company had entered into a contract for engineering and construction with Ebasco Services, Inc., 2 Rector Street, New York City, and Ebasco further contracted with L. Morris Mitchell, an engineer, for further



HERE'S THE ENGELMANN'S SPRUCE BARK BEETLE—the little bug which has stirred up all the trouble in Colorado, already costing Uncle Sam some \$3,000,000 to battle, and he isn't licked yet.



A TYPICAL ENGELMANN'S SPRUCE SCENE in Colorado, showing the kind of wood the beetles are attacking. When they destroy the spruce, they go after lodgepole pine, which apparently is not as luscious to them, but will satisfy a hungry beetle.

specific plans on logging and plant engineering. The process to be employed is the one developed by the laboratory at Madison.

The mill currently projected is to be a bleached kraft plant, but it was reportedly possible that the Defense Production Administration might direct the construction of a sulfite mill instead, although, inasmuch as the problem of pollution was a very serious one in Colorado and the Colorado pollution laws had a lot of teeth in them, this was considered remote. The kraft process would produce good dissolving pulp, it was reported, and the Government was said to want more dissolving production. It was possible that the DPA would direct them to allocate their pulp production to certain sources.

The company presently has no connection for sale or delivery of pulp to any paper mill; the company will not under any circumstances manufacture paper, it was said.

The Beetle Battle

Events leading up to the Colorado Spruce Beetle 1950 Control Project began in June, 1939, when high winds caused a heavy blow-down of Engelmann's spruce timber on the White River Plateau in western Colorado. The large numbers of down trees formed a perfect host condition

allowing a tremendous build-up of the normally endemic Engelmann's spruce bark beetle to what was recognized as an epidemic condition in 1941. War years intervened until the epidemic had spread to such proportions as to constitute a threat to a major portion of the 19 billion bd. ft. (38,000,000 cords) of Engelmann's spruce timber in Colorado, plus additional amounts in southern Wyoming and northern New Mexico.

Investigation of the beetle's life history was started in 1944, and in 1949 came the break which made 1950 the strategic year in which to make an attack on it. High winds spread the population to new areas. Natural enemies were at their highest effectiveness. The spread constituted an even more potent threat to all the Engelmann's spruce timber of Colorado. It was evident that if the beetle was to be stopped, the opening battle of the campaign must be in 1950.

Planning and surveys were begun in the late summer of 1949 and continued through the winter and spring of 1950. An appropriation of \$2,885,000 was requested. The first \$2,000,000 was finally appropriated in late June, 1950.

The 1950 Control Project, although handicapped by a late start and insufficient funds, accomplished the major part of its planned objective, which was to kill the beetle brood in trees attacked in 1949 along the eastern and southeastern fronts of the infestation. When the 1950 Project closed in October, a total of 784,082 beetle-infested trees had been found and treated.

Orthodichlorobenzene used to kill the beetles, was an especially difficult item to obtain. It was found that the United States Air Force at Wright Field had purchased a sizeable quantity of orthodichlorobenzene for use as a degreasing agent. Through the cooperation of the Air Force and the Dow Chemical Co., contractor, a portion of this supply was diverted to the Forest Service; also a supply of a commercial grade product was located. This was high in paradi-chlorobenzene content and held quantities of a tar residue which came out of solution when mixed with burner oil.

Moss Point Addition

Southern Kraft Div., International Paper Co., at Moss Point, Miss., has placed an order for a bleach plant heating and ventilating system with J. O. Ross Engineering Corp.

Also being installed at the Moss Point mill is a fly ash collector furnished by Buell Engineering Co. This is a van Tenger type designed to handle 82,000 cfm. of flue gas at 600°F. This volume corresponds to a burning rate of 30,000 lbs. bark per hour. It consists of six cyclones and has a two-inch draft loss.

Appleton Addition

Appleton Coated Paper Co., Appleton, Wis., is building a new 30 by 80 foot structure, estimated at \$30,000, to be used for storing raw stock and as a loading dock. The paper company this year added a laboratory and office building, in use since February, and a warehouse, in use since early May.

IMAGINE...

America without paper!



No more paper or paperboard! Not a single shipping carton or a scrap of paper for vital records and communications! Overnight, America's military effort would bog down . . . the nation's strength and security would be imperiled. Imagine the chaos on homefront and battlefield . . . without letters, orders, bulletins, plans or maps. No cartons . . . no wax or waterproof paper . . . no wrapping paper . . . no special paperboard containers to protect military supplies from rot or rust . . . *Unthinkable!* Don't take paper for granted. Anything so basic and essential should be safeguarded. America *depends* on paper! Use it wisely . . . protect its production...keep America strong.

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PAPER



PREPARED IN THE PUBLIC INTEREST BY BELoit IRON WORKS, BELoit, WIS.
MAKERS OF HIGH-SPEED, HIGH-PRODUCTION PAPER MACHINERY SINCE 1858

CAN YOU USE REPRINTS? This is one of a series of messages Beloit is running in Fortune Magazine, to remind the U. S. of paper's importance. Reprints for bulletins and mailing available. Write to Beloit Iron Works, Beloit, Wis.

MACHINE TENDER Munchausen Stories

Here is another amazing chapter in our fascinating series of Machinetender Munchausen stories. This one came from one of our readers in England.

S. V. Sergeant, who is resident chemist of the big Bowater's Thames Paper Mills, Ltd., at Northfleet, Kent, on the right bank of the widening Thames mouth just below London, is the author (in picture at left). Mr. Sergeant wrote:

"The Editor,

PULP & PAPER,
Seattle, Wash.
Dear Sir:

I have followed with great interest your unique series of Machinetender Munchausen stories and it occurred to me that you might like to see the enclosed specimen which tells of one of the many strange encounters that seem to happen to chemists, especially those connected with paper mills.

Yours Faithfully,
S. V. Sergeant,
Resident Chemist."

We are very happy to forward to Mr. Sergeant his honorarium of \$5.00 for this story.

And to any mill man or peddler we will pay a like sum for any similar story used. It doesn't have to have the faintest flavor of—ahem—veracity about it, but it must be about strange happenings in this industry. Try your hand at telling one!

The Fabulous Tale of A Uranium-Nurtured Forest

Mr. Sergeant's story.

"Some time ago I was in need of some help in the garden and asked the mill superintendent if he knew of a man with 'green fingers' who could be of use to me. He said, 'Oh, you want Paul Bunyan—he's a wizard at gardening. I'll get him to come and see you.'

"That afternoon as I was sipping my tea, wishing I was drinking 'coke' in Newfoundland, there was a knock at my office door, and instead of the giant I expected to see there was a shriveled, pint-sized man before me.

"'Are you Paul Bunyan?' I asked in surprise. 'That's what they call me,' he replied. 'You see, it's like this. I used to work in a Canadian pulp and paper mill at one time and one day the manager told me they were running short of wood. Did I think I could do anything about it?'

"'Give me a fortnight,' I said, 'and I'll let you know. Mind you, I won't promise anything.'

"It so happened that I took a great interest in hydroponics—you know, soil-less culture, growing things in water instead of earth, and I knew that small quantities of different metal salts plus water would give the plant all the nutrient it needed. Then I remembered that uranium salts had never been tried and I thought that by mixing these in the right

proportion with the other compounds the growth might be stimulated.

"That night I got a few pine seedlings and put them in water with various mixtures of salts including a little uranium sebacate I had scrounged from the laboratory, and then went to bed in the room above.

"At four in the morning I woke up to find something pushing me in the back—and do you know what it was? It was actually a pine tree! One of the seedlings had responded so well to the uranium that it had become a 12-foot sapling in just over five hours and had forced its way through the ceiling and against the spring mattress of my bed. It's a good thing I woke when I did or I should have found myself being pushed through the tiles."

"Very interesting, I said, but how does that account for their calling you Paul Bunyan, who by all accounts was a real giant?

"I was just coming to that," he went on. "This discovery of mine, the use of uranium, I mean, gave us all the wood we needed. In fact, it brought the growth cycle down to a month, from seedling to fully-grown tree, and everyone was pleased. Then one day my wife happened to wrap up my sandwiches in some paper

that had been used for the uranium salt mixture. Well, I was sitting at the wet end, eating them, about halfway through the shift, when suddenly I found myself shooting upwards—sort of growing up in a hurry, and, so I'm told, my head hit the machine house roof with such a bang that I was knocked out and fell headlong.

"They say I was so tall that I reached from the first press to the winder. It seems I was unconscious for about a month and by that time having had no food since those fatal sandwiches, I had shrunk down from giant size right down to what I am now—a meagre four-foot-six without stopping at the six-foot-three I used to be.

"The doctors called it a perfect example of 'elastic de-extension' but whatever it was it earned me the name of Paul Bunyan—and what is more important I couldn't remember the formula of the salt mixture so the mill had to shut down through shortage of wood and I lost my job."

"I thanked him for telling me his most interesting story but, playing safe, I said I had thought of laying out a landscape garden behind my house but on second thought had decided to cover it with crazy paving, so I would not require his services after all. He looked quite disappointed as he left me to go back to the mill."

Fort Miller Groundwood Plant in Operation

The plant leased by Marinette Paper Co. from the Fort Miller Pulp and Paper Co. in Fort Miller, N. Y., earlier this year had been placed in operative condition and is now running on a 3-shift schedule. The plant has a capacity of from 15 to 20 tons of pulp per day from its three wet machines.

Harold R. Chadwick, formerly pulp preparation foreman at Marinette's principal plant at Fort Edward, N. Y., is general foreman at Fort Miller, while Robert E. March, Marinette technical director, has overall responsibility for the operation. Darcy Wilkinson is general manager of Marinette, and in addition to Fort Edward and Fort Miller also operates a plant at South Glen Falls, N. Y.

BELoit REPRESENTATIVE IN FAR WEST

Russell A. Goodwillie (shown in picture), veteran sales engineer for the Beloit Iron Works, Beloit, Wis., manufacturers of paper machines and papermaking machinery, has moved permanently to Portland, Ore., to be the Pacific Coast representative for his firm in that rapidly growing paper manufacturing region.

This move by Beloit to improve engineering and sales service to the Far



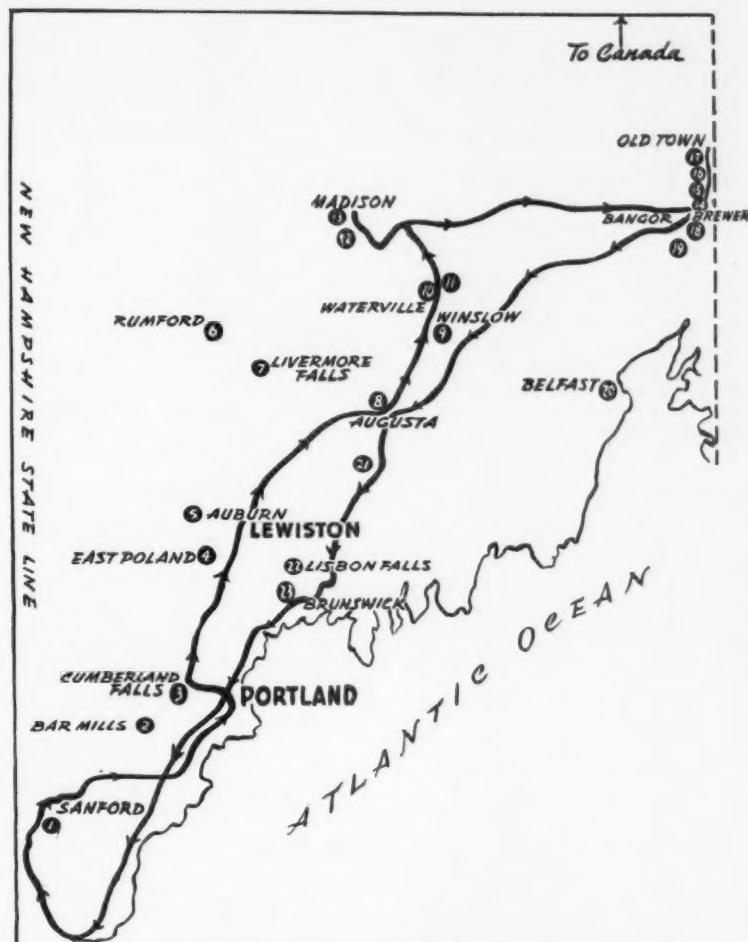
Western industry was announced by E. H. Neese, president of the company.

"Russ" Goodwillie is a younger brother of J. E. "Bill" Goodwillie, one of the vice presidents of Beloit. The former has moved with his family of four into a home at 7156 Southeast Reed College Place, Portland, which will also be his headquarters for the time being. Others of the family are his wife and daughters, Mary 11, and Ann 9.

Born in Detroit, Mich., he graduated from Michigan State College as a mechanical engineer, and after a short time with General Electric at Schenectady, N.Y., he joined Beloit. He has been with the Wisconsin machinery firm for 17 years.

What's Doing In Maine

A TOUR OF THE "DOWN EAST" STATE



MAINE MILLS, PULPWOOD CO.'S FORESTS, ETC.
Along Route Traveled by PULP & PAPER

| | |
|-----------------------------------|-----------------------------------|
| 1. Massabesic Experimental Forest | 13. Great Northern Paper Co. |
| 2. Rogers Fibre Co. | 14. Penobscot Experimental Forest |
| 3. S. D. Warren Co. | 15. University of Maine |
| 4. Rogers Fibre Co. | 16. Penobscot Chemical Fibre Co. |
| 5. Pendo Extract Co. | 17. Old Town Co. |
| 6. Oxford Paper Co. | 18. Eastern Corp. |
| 7. International Paper Co. | 19. St. Regis Paper Co. |
| 8. Hudson Pulp & Paper Co. | 20. Sherman & Co. |
| 9. Hollingsworth & Whitney Co. | 21. S. D. Warren Co. |
| 10, 11. Keyes Fibre Co. | 22. U. S. Gypsum Co. |
| 12. Hollingsworth & Whitney Co. | 23. Penobscot Paper Co. |

With inventories of pulpwood in May and June close to 30% under normal, and with a scant possibility of finding the several thousand additional men needed to log the two million cords annually consumed by the Maine pulp and paper industry, woodlands managers in the Down East state were hard put to solve their

problems and keep their mills running. Complicating the situation was the unusual fact that the neighboring Canadian industry, with no ceiling on wages and prices, was outbidding Maine producers for both labor and pulpwood.

This was the situation uncovered for PULP & PAPER in an editorial tour of many

mills in the nation's third largest pulp producing state.

The Maine predicament was the result of the combined workings of man and nature. Inventories became initially low because of a winter which made it difficult to cut and log out during the ice and snow hauling period normally lasting from Jan. 1 to about March 15. This condition then was aggravated by the tailored wage freeze which was set on such a low base that Maine producers were not able to bring men into the woods, either from the U.S. or Canada.

Of the two-million-cord annual requirement of the Maine pulp industry, approximately one-third is normally sappled. Spruce, fir and hemlock are peeled from about May 15 till the advent of the August full moon; and poplar and hardwoods until around the middle of July. A labor force of from 27,000 to 30,000 men is usually needed to do the job for Maine and New England—including New York.

With wages frozen from \$5.50 to \$6.00 per cord for rough pulpwood, and at \$7.50 to \$8.50 per cord peeled, Maine woodlands managers found they were unable to attract sufficient labor force from competing U.S. industries, and to entice many of the 9000 Canadian woodsmen annually allocated to come to help with the U.S. woodlands harvest. Continuing inflation of prices and wages in Canada placed the U.S. industry in an extremely unfavorable situation.

Top-flight woodlands managers were quick to get together to lay their problems before the Wage Stabilization Board in an effort to get relief in time to save the 1951 season. Important in this presentation were such as Wm. Hilton, Great Northern Paper Co.; John Bancker, Kennebec Division Hudson Pulp & Paper Corp.; K. A. Sweening, Hollingsworth & Whitney; Louis Freedman, Penobscot Chemical Fibre Co.; W. E. Eggleston, Eastern Corp.; and others.

At the time of this writing WSB seemed to look favorably on the case of the Maine producers. Whether relief would come in time to get the wood out and keep the mills in top production was something else again.

Better Utilization of Resources

Of the 17 million acres of timberland in Maine, about 5 million acres are in the hands of small ownerships, 9 million in the hands of pulp and paper companies, and the balance in miscellaneous control. Maine resources are such that it would be possible, provided proper forest management were applied, to increase the wood usage without depletion of the supply. Such management calls for (1) better



THIS SIGN MARKS THE ENTRANCE to Maine's newly dedicated Penobscot Experimental Forest. The 3800-acre property was purchased by nine New England paper companies and June 23 was turned over to U.S. Forest Service on long term lease agreement. The property will be used in conducting special studies. (American Forest Products Industries Photo.)

cutting practices by the large ownerships; (2) better management by the small ownerships; and (3) a system of roads to open up for use some of the presently inaccessible woodlands.

In regard to the first, nine large companies have joined hands to provide 3800 acres near Bangor to be known as the Penobscot Experimental Forest, and to be operated by the Northeastern Forest Experimental Station. These companies include: Hollingsworth & Whitney, Oxford Paper Co., Eastern Corp., Dead River Co., St. Regis Paper Co., S. D. Warren Co., International Paper Co., Penobscot Development Co., and Great Northern Paper Company.

This forest was formally dedicated in Bangor, June 22-23, and the sponsoring companies and U.S. foresters shown progress made in the initial experiments. The initial project is being conducted to determine how to grow various kinds of spruce-fir timber crops at a maximum profit. Fifty adjoining acres have been divided into four equal plots, and on these plots four levels of cutting practices are being employed—high order, good, fair and poor. Records are being kept of yield, cultural practices used, and other factors in order to determine which practices are economically sound.

Six of the same companies establishing the Penobscot Experimental Forest (Great Northern, Dead River, Hollingsworth & Whitney, Penobscot Development, International and St. Regis) plus the Brown Co., are sponsoring a further project by the Northeastern Forest Experiment Station on growth studies in the spruce-fir region. The objective is to estimate the growth of all commercial species in established plots which can be evaluated in terms which can then be used by woods managers in preparing detailed reports on the relative condition, producing power and capital investment of various parts of their company holdings.

To increase the yield of timber and quality of management from the small ownerships, A. D. Nutting, Maine Forest Commissioner, told PULP & PAPER that the number of state service foresters will be increased by four men as a result of an increase in appropriation for this work



AT LEFT, PART OF 1000 ACRES of burned-over timber land near Alfred, Me., being logged for pulpwood for use at Lisbon Falls plant of U.S. Gypsum. This is first important utilization of standing timber from 130,000 acres burned in fire of 1947.

At right, a crew loads truck with pulpwood logs. U.S. Gypsum is logging pine and using sizes down to 3-inch top.

recently granted. If federal matching money for the work is realized, then eight men may be added, bringing the total of service in the field to ten.

The objective of the service foresters, Mr. Nutting said, is to provide small ownerships with help in cutting and marketing, and to develop ideas for more complete utilization of Maine timber resources.

Tied in with this program was the tree farm program. A committee of the wood industries was to meet to see what could be done towards sponsoring this latter program. On this committee were: Lewis Bissell, extension forester, University of Maine; Norman Gray, Freeburg; Elmer Kelso, Hollingsworth & Whitney; John T Maines, Great Northern Paper; E. C. Meicher, S. D. Warren Co.; George Winter, St. Regis; Edwin Giddings, Penobscot Chemical Fibre; George Sawyer, Dunn Timbers; Henry Shepard, Eastern Pulp Wood Co.; R. S. Waldron, P. H. Chadbourn Co.; and Morring Wing, International Paper.

In respect to utilization, one of the most interesting projects in all Maine is the logging of burned stands of timber around Alfred, and use of this timber as pulpwood for the manufacture of building and insulating board by the Lisbon Falls plant of U. S. Gypsum Co. 130,000 acres in this area was burned over in the fire of 1947, and no use has been made of the standing timber until this time.

Original logging of the burned stands was from 3700 acres in the Massabesic Experimental Forest. But 1000 additional acres are now being worked by U. S. Gypsum with a crew of 20 men which began cutting early in May and will continue throughout the year. Gypsum is logging out all the pine species of a size down to 3-inch top, that has not been badly charred through the bark.

Mill Improvements

Preliminary work has begun by the Great Northern Paper Co. on a 4000-foot tunnel to take water from Ripogenus Lake to a power site in the gorge below the Ripogenus dam for the development of power through two units of about 13,500 kva. each. The additional power is needed to handle the increased tonnage output of

Great Northern's Millinocket mill.

The Millinocket mill (see PULP & PAPER, Sept. 1950) will this year install the sixth and last machine in a modernization and expansion program that began at the end of the war and which represents an increase in production of 37,500 tons per year.

The dam which confines Ripogenus Lake was completed in 1917, and was built to provide water for driving of Great Northern's pulpwood logs, and for operating the hydro-electric power stations located at its mills in Millinocket and East Millinocket. The new tunnel being constructed will be bored through solid diabase and granitic rock, and at places will be as much as 250 feet below ground. The power site reached by the tunnel is at Little Heater Island, and will take advantage of a gross head of approximately 184 feet.

Part of Great Northern's program includes the construction of a new road from the dam to Millinocket which will cut the distance from 55 road miles to 33. Stone and Webster Corp. of Boston are working with Great Northern on the project.

Other work going on at Maine mills includes the construction of a bleached groundwood mill at the Augusta division of Hudson Pulp & Paper Co. This new building is expected to be completed in November.

Sulfur Situation

The much-rumored plan of a number of the Maine sulfite mills to band together for construction of a plant to produce sulfur from pyrites to bolster their common supply of this scarce material apparently remains in the planning or "thinking" stage. The director of research of one of the largest sulfite producers expressed himself as feeling that more could be accomplished by the pulp producers by learning ways to economize on use of sulfur than in building plants to develop pyrites as a source. He said that in his plant the consumption of sulfur had been cut to approximately 217 lbs. per ton as a result of their efforts, and that it might be possible to reduce this still further.

At the University of Maine, called by



U. S. FOREST SERVICE FORESTER stands in section of Penobscot Experimental Forest established by nine pulpwood and pulp and paper companies, on which experiments for the industry are being conducted by Northeastern Forest Experiment Station.

PULP & PAPER in a 1950 feature article the "Cradle of Industry's Technical Training," work proceeds in augmenting the staff in pulp and paper; adding to the technical training equipment; and encouraging qualified students in chemical engineering and chemistry to specialize in this field. Industry has enthusiastically supported the year-old University of Maine Pulp and Paper Foundation. There is a recognized need for increased support and activity in order to encourage young men not yet in the services, and who are going into the field of chemical engineering or chemistry, to specialize in pulp and paper work.

The high degree of competition by industries for young men with technical talent and training, makes it important that enough of these young men have specialized training to fill the requirements of the pulp and paper industry. Maine people see this problem, and the need for encouragement to young men to enter this field.



Northeast Notes

GEORGE A. DAY, director of research, Brown Co., Berlin, N.H., is the new chairman of the Maine-New Hampshire Section of TAPPI. Other officers elected at the semi-annual meeting of the Section at North Conway, N.H., June 22-23 included: JOSEPH J. THOMAS, S. D. Warren Co., vice president; and H. E. PRATT, Pejepscot Paper Co., secretary-treasurer. Executive committee members are: O. E. ANDERSON, International Paper Co.; W. A. HINDS, Keyes Fibre Co.; JOHN B. CALKIN, University of Maine; HENRY HOOVER, Penobscot Chemical Fiber Co.; THEO. KLOSS, Hollingsworth & Whitney; ARTHUR E. JONES, Oxford Paper Co.; WARREN DANIELL, Great Northern Paper Co.; J. F. WRIGHT, National Aniline Div. of Allied Chemical & Dye Corp.; and F. A. STROVINK, American Cyanamid Co. HARRISON F. DUNNING, general operating manager, Scott Paper Co., was a featured

speaker at the Industrial Conference on Human Relations held in Silver Bay, N.Y., July 20. HENRY RYER, formerly assistant purchasing agent at the Fort Edward, N.Y., plant of Marquette Paper Co., has recently assumed the duties of purchasing agent for the South Glens Falls plant of the company. GEORGE CLOSSAY, formerly assistant personnel manager at Marquette, has been named director of the department, and SHERMAN TIBBETTS is taking over the post as his assistant.

DAVID C. PRINCE, a vice president of General Electric Co. and former head of its general engineering and consulting laboratory, has retired after 32 years of service, according to RALPH J. CORDINER, G-E president. In addition to notable service with G-E, Mr. Prince once served as president of the American Institute of Electrical Engineers.

GEORGE BIDWELL, formerly general manager, has been named president of Adams Paper Co., Wells River, Vermont, and H. J. WALLEACE has been elected vice vice president and director of Ben-Mont Papers, Inc., Bennington, Vermont. He was formerly general manager of Ben-Mont. Both companies are affiliates of The Doebekkun Co., Cleveland, Ohio.

RUSSELL D. SCRIBNER is new production manager of the folding carton division of Robert Gair Co., Inc. Mr. Scribner's former activities include 15 years with DuPont, manager of four plants of Shellmar Products Corp., and director of the Associated Industries of Vermont.

WILLIAM J. FINNORN and ROBERT SWECKER have joined the laboratory staff of Timber Engineering Co., Washington, D.C. The announcement was made by CARL A. RISHELL, director of research for the company.

FLOYD TRIGGS, advertising manager of Riegel Paper Corp., received the award given his company by the National Industrial Advertisers Assn. at its annual meeting in New York in June. NIAA's award was for Riegel's advertising campaign on technical industrial papers produced at its New Jersey mills.

DR. EDWIN A. REES, director of felt sales and a member of the board of directors of F. C. Huyck & Sons, has retired from active duty although he will continue to serve his company in a consulting capacity, it has been announced by GRENVILLE R. HOLDEN, president of the company. Dr. Rees has served his company and the industry continuously since 1920 and is well known for his contributions to the paper-making field.

GEORGE SUMNER BARTON, chairman of the board, Rice Barton Corp., presented gold watches to new 30-year members of his company at the second annual meeting of the Rice Barton "1837 Club" in Worcester, Mass., in June. Present members of the "1837 Club" with 30 or more years of service represent a total of 1214 years of employment.

DR. VERNE L. HARPER has been appointed assistant chief of the U.S. Forest Service in charge of research, Washington, D.C., and his place as director of the Northeastern Forest Experiment Station at Upper Darby, Pa., has been taken by DR. RALPH W. MARQUIS, former assistant chief of the division of forest economics in the Forest Service.

LAURENCE F. WHITMORE, president of Brown Co., Berlin, N.H., has announced the election of JOHN W. JORDAN as vice president and general counsel and the re-election of all other officers.

BENJAMIN H. HEIM, formerly vice president of Cellu-Craft Products Corp., has been appointed Middle Atlantic and Southern Division manager of Olin Products Co., Inc.

ALLIED PAPER BAG CORP. of Baltimore announces appointment of CHARLES C. CATLIN to the newly created position of general manager.

New England TAPPI

Officers elected to serve New England TAPPI for the 1951-52 season at the annual meeting of the Section include: Dr. H. W. Knudson, Hollingsworth & Vose Co., chairman; F. S. Klein, Byron Weston Co., vice chairman; H. T. Barker, Bird & Son, Inc., treasurer; and A. G. Dreis, Hercules Powder Co., secretary.

Northeast Supts. Dates



Sept. 14-15 have been set as dates for the Fall Meeting this year of the Northeastern Division of the Superintendents Association. The place: Poland Spring House, Poland Spring, Maine, according to John C. Coppens, supt. of catalog mill, Frazer Paper, Ltd., Madawaska, Maine, chairman of the Division, shown in the accompanying picture taken by PULP & PAPER.

Penn-N.J.-Del. Supts.

G. T. Renegar, Container Corp. of America, Philadelphia, Pennsylvania, as chairman of the Pennsylvania-New Jersey-Delaware Division of the Superintendents Association, has announced that the 1951 fall meeting of the division will be Sept. 28-29 at The Pocono Manor, Pocono Manor, Pa. The technical program will aim to interest most of the many different types of mills in the division—board, kraft, book, bond, tissue, toweling, roofing specialties, glassine, building boards, chips, news, and insulating paper, and pulp mills.

Key Men For New Marathon Mill

Transfer of seven persons from the Marathon Corp. plants at Menasha, Wis., and at Menominee, Mich., to the company's new plant at Oswego, N.Y., has been announced by Donald Rawson, manager of the Oswego plant, purchased from St. Regis.

Owen Hanson who will be chief accountant and office manager, Lee Steinbach who will be production control supervisor and William Lloyd, plant personnel supervisor, left for Oswego recently to take over their new duties.

Messrs. Hanson and Steinbach previously worked in Marathon's Menominee office, and Mr. Lloyd had been employed at the office in Menasha.

William Llewellyn, a former Menominee employee, already was at Oswego, as plant engineer. Ted Przybylski, a recent Marathon trainee at Menasha, will be another member of the plant engineering department.

Gordon Sando was being transferred from the purchasing department in Menasha to be purchasing agent for the new plant.

The position of process engineer at Oswego will be filled by John Spalding, Appleton, whose duties also will include quality control.

Mr. Spalding has been supervisor of the process engineering department at Menasha. He and Mr. Rawson were working out of the Menasha office but expect to move their families to Oswego soon.

Forest Products Society

About 3,000 attended the 5th annual meeting of the Forest Products Research Society in Philadelphia recently, at which Ray Carter, professor of wood utilization, North Carolina State College, was elected president. Kenneth G. Chesley, of Crossett Industries, Crossett, Ark., was elected first vice president; Robert D. Pauley, manager, Research Center, Weyerhaeuser Timber Co., Longview, Wash., second vice president, and Frank J. Rovsek, Forest Products Research Laboratory, Madison, Wis., secretary-treasurer.



HAROLD BLANCKE, President, Celanese Corp. of America, flanked on left by GEORGE SCHNEIDER, Vice President, and on right by HON. E. T. KENNEY, British Columbia's Minister of Lands and Forests, is greeted by Prince Rupert reception committee. Face mostly obscured behind Mr. Schneider is Vice President G. H. RICHARDS of Celanese.



DR. RALPH H. BALL, General Mgr., Cellulose Div., Celanese Corp., presides at the official luncheon. At left are: JOHN HART, former Premier of British Columbia under whose regime negotiations for the mill were initiated; MAYOR GEORGE RUDDERHAM of Prince Rupert and MR. BLANCKE. To Dr. Ball's left are HON. E. T. KENNEY, minister of lands and forests, who signed agreement with Columbia Cellulose Co., and PAUL E. COOPER, President of Pacific Mills and Chairman, Western Branch, Canadian Pulp and Paper Association.

Celanese To Add Unit CRUISER GUESTS ENTHUSE OVER B. C.

Columbia Cellulose Co.'s big new \$27,000,000 high alpha pulp mill at Watson Island, B.C., first went into production this spring, but plans are already under way for its large-scale expansion.

At the formal opening of the mill, June 12—an historic event for that section of British Columbia—Harold Blancke, president of Columbia Cellulose Co. and of its parent company, Celanese Corp. of America, told a distinguished gathering of several hundred, representing government, finance and industry, that it would be difficult to hazard a guess as to the full extent of development that would follow the company's pioneering enterprise in this vast forest region, previously bypassed or overlooked by wood-utilizing ventures.

"Columbia Cellulose Co. is barely on the threshold of its ordained usefulness and importance to British Columbia," said Mr. Blancke. "It should grow into a great organization of loyal people engaged in manufacturing basic timber into finished and semi-finished products. While this plant near Prince Rupert had barely got into production, we have just approved a substantial expenditure to enlarge it. It is difficult to estimate its ultimate size."

Distinguished Guests Spread Word

The formal opening was the climactic event of a round-trip cruise from Vancouver, B.C., aboard the chartered Canadian National SS Prince George, on which a large party of prominent U.S. and Canadian financial and industrial leaders were guests of Celanese. As a result of this Celanese hospitality, these prominent figures have returned to their many separate communities and business centers to spread the word far and wide of great potentialities for major timber use industries in northern British Columbia. If any single one of them was not converted to enthusiasm for the future of the province in pulp and paper, he must have kept it a deep secret.

It hasn't been revealed yet whether Columbia Cellulose Co. in its present expansion program will depart from bleached sulfite of the high alpha grades and enter into other new fields, such as dissolving kraft, but is known that a kraft mill is

contemplated eventually to work in conjunction with the present mill as it would be in line with the company's policy of full utilization of raw material. The long-term program will also depend on whether the Celanese Corp. of America decides to establish in other sites in British Columbia, such as the Arrow Lakes, where the provincial government recently opened a



VINCENT LYONS and A. S. DEMPEWOLFF from the New York office of Celanese Corp. of America. Mr. Lyons headed up the organization for public and press relations.

new hydro-electric plant. There is a possibility that Celanese might decide to produce dissolving kraft pulp at Watson Island such as is now being successfully manufactured in the Southern U. S.

For the first published, completely illustrated article on the first unit at Watson Island, see *PULP & PAPER*, June 1951 issue.

Mr. Blancke pointed out that world markets for this new mill's products are already larger than the company can supply with its present facilities. Demand is accelerating faster than production can be built.

"Even on this day of official opening," said Mr. Blancke, "we recognize that we must enlarge the mill's productive capacity and it is quite possible that the company will have to build additional plants before an equilibrium can be attained between demand and supply."

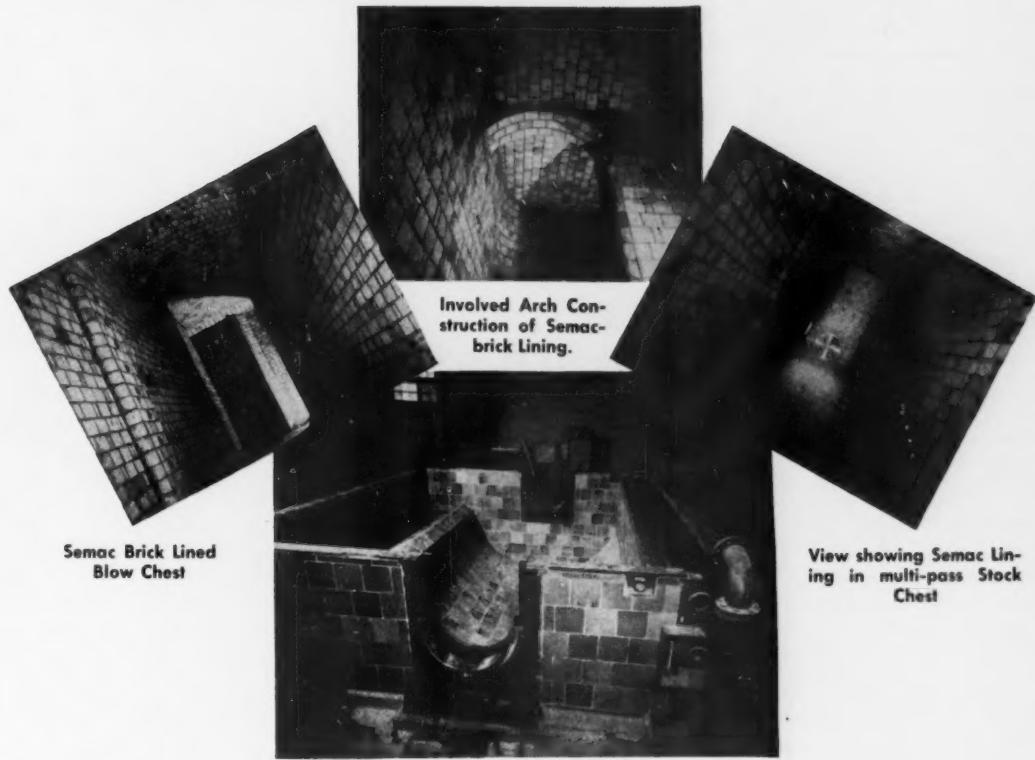
Minister of Lands Raises Flag

It was an impressive moment when Hon. E. T. Kenney, British Columbia's minister of lands and forests, raised a four-yard Canadian red ensign made entirely of acetate yarn—the only flag of its kind in Canada, made locally of dyed taffeta. This signaled the formal dedication of the plant to modern industry.

Mr. Kenney was one of several speakers at the ceremony and for him the occasion was particularly memorable since he represented his government through the successful negotiation with Celanese Corp. of the first forest management (sustained yield) license to be granted in British Columbia. Ex-Premier John Hart, during whose regime the negotiations were initiated, was present at the function, along with other federal, provincial and municipal leaders.

Mr. Blancke referred in his address to his company's undertaking with the government of British Columbia respecting

Columbia Cellulose chose Stebbins for their Time-Tested Acid Brick Linings Semtile Construction & Semplate Linings



We are particularly proud of our installations of acid proof brick linings for the digesters, acid storage tanks, accumulators, and the largest circulating blow chests ever constructed . . . Washer Vats, Head and Seal Boxes, Consistency Regulator etc. and linings for various Process Chests.

CANADIAN STEBBINS ENGINEERING & MFG. CO., Limited
CASTLE BUILDING, 1410 STANLEY ST.
MONTREAL, P.Q., CANADA

S. S. PRINCE GEORGE, well known Pacific Coast passenger ship, chartered for the Columbia Cellulose cruise (above) and a group on deck (below). Clockwise, starting with dark-haired gentleman at about "8 o'clock": JOHN FENNEBRESQUE, chemical engineer, Celanese Corp., in charge of construction of its new plant to produce cellulose acetate and industrial chemicals on large scale at Edmonton, Alberta; H. D. RUHM, Jr., Bates Mfg. Co., New York; FREDERICK GILBERT, Asst. Publisher, Time, Inc., New York; ERNEST C. GEIER, Chairman, Duplan Corp., New York; J. J. CALLAGHAN, Asst. Publisher, Seattle Post-Intelligencer, and WILLIAM L. O'DONOVAN, Vice Pres. in charge of Sales, Celanese.

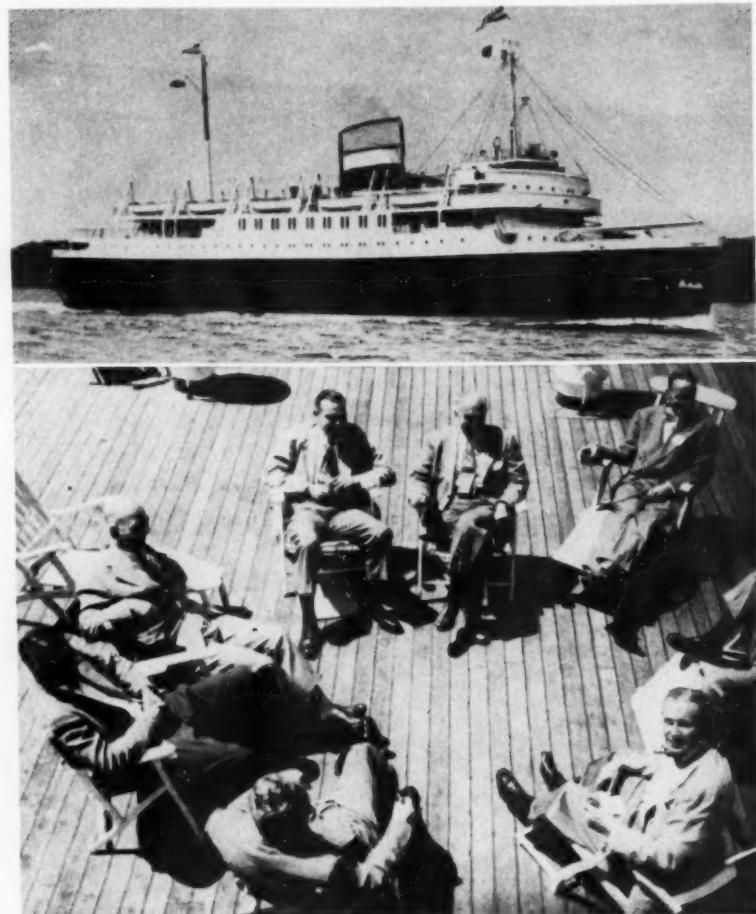
forest management. "This province is forever indebted to patriotic men like Hon. John Hart, Hon. E. T. Kenney and Dr. Chauncey Orchard for promulgating the legislation which resulted in modern forest management licenses," said Mr. Blancke. "Columbia Cellulose Co. is proud to be a partner in the vanguard of the movement to develop the province's natural resources for the general welfare."

Mr. Kenney referred to the Watson Island project as significant of the current spectacular expansion in British Columbia, and it was his opinion that the Columbia Cellulose development would spark industrial growth throughout that part of the province. "We are bursting our industrial seams and it is bringing attendant problems," said Mr. Kenney, "but they are welcome problems and healthy signs."

Spokesman for the Canadian pulp and paper industry was Paul E. Cooper, president of Pacific Mills, and chairman of the Canadian association's western branch. His own company is currently engaged with Canadian Western Lumber Co. in expansion of its own at Duncan Bay, Vancouver Island, where a newsprint mill is under construction. Said Mr. Cooper:

"Prince Rupert's fine new acetate pulp plant, built for Columbia Cellulose Co., is a Class A example of risk capital at work establishing a giant operation to convert, at a profit, the continuous crops of trees from managed forests into products for the world markets. To Canada's growing and essential export trade Columbia Cellulose will annually make an important contribution of hard dollars."

Mayor George Rudderham, on behalf of the city of Prince Rupert, expressed the



citizens' welcome to the company.

At the official luncheon, the chairman was Dr. R. H. Ball, general manager of the Cellulose Division of Celanese Corp. Among representatives of the parent company in attendance, besides Mr. Blancke, were: Vice Presidents George S. Schneider, George H. Richards, F. T. Small, W. L.

O'Donovan. Other Celanese officials present included, Emery N. Cleaves, Peter D. Cooper, A. S. Dempewolff, John D. Fennebresque, Ronald O. Gilbert, Wallace W. Hoge, Vincent Lyons, Morris B. Mines, Edward S. Morse, and S. B. Roberts. Prominent among Columbia Cellulose executives were W. C. R. Jones, mill manager, and Rae Johnson, woods manager. D. G. Stenstrom of Vancouver, executive consultant to Columbia Cellulose, and Axel Brandstrom of Seattle, forestry consultant, also were present.

ABOARD S.S. PRINCE GEORGE ON CRUISE to Columbia Cellulose Formal Opening. Top row (l to r): R. W. HOOKER, Vice Pres., Hooker Electrochemical Co., Niagara Falls, N.Y.; ERNEST C. GEIER, Chairman of Board, Duplan Corp., New York City; JACQUES WEBER, Pres., Bloomsburg Mills Inc., New York City; REX VINCENT, Tech. Director, Bulkley, Dunton Pulp Co.; ERIK EKHOLM, Vice Pres., Puget Sound Pulp & Timber Co., Bellingham, Wash.; GERALD F. ALCORN, Engineer in charge of new construction, Pulp Div., Weyerhaeuser Tbr. Co., Longview, Wash.; JOHN ASHBY, Mill Mgr., Westminster Paper Co., New Westminster, B. C. Lower row (l to r): JAMES F. GRIFFITH, Pres., Jos. Griffith & Sons Inc., Seattle; G. D. HUMPHREY, Raw Materials Gen. Mgr., Alaska Pine & Cellulose Co., Ltd., Vancouver, B. C.; E. M. HERB, President, Westminster Paper Co., New Westminster, B. C.; RAY E. BAKER, Mills Mgr., Pulp Div., Weyerhaeuser Tbr. Co., Longview, and LAWRENCE K. SMITH, Vice Pres., Miller Freeman Publications and Mgr., PULP & PAPER.

BROWN WILL PRODUCE SULFUR

Construction of a plant to produce the sulfur equivalent of 9000 tons per year in the form of SO_2 gas has been announced by L. F. Whitemore, president of Brown Co., Berlin, N. H. Sulfur will be produced through the roasting of iron sulfide concentrates furnished under contract with the Vermont Copper Co. of South Strafford, Vermont, and the plant is expected to begin production in 10 months.

The system to be installed by Brown is known as the Dorco FluoSolids System, developed by The Dorr Co., Engineers, Stamford, Conn. This system, which was described in detail in the May 1951 issue of *PULP & PAPER*, makes use of either pyrite or pyrrhotite as a flotation concentrate.

The Vermont Copper Co.'s mine is approximately 100 miles from the Berlin plant of Brown and shipment of the iron sulfide concentrates will be made on the B. & M. Railroad. The concentrates are accomplished by the flotation process utilizing tailings from which copper concentrates have been removed. Vermont Copper has sufficient production to supply all of Brown's requirements, it is said.

The statement from Mr. Whitemore says: "The flusolids plant is being laid out with a view to doubling its capacity if found necessary in the future with little added capital required.

"After extensive research and study

into various processes for roasting pyrrhotite and pyrite concentrates, Brown Co. decided on the Dorr process which gives a gas of sufficient strength to be utilized in the present acid system of our sulfite mill.

"Although pyrrhotite concentrates contain a lower percentage of sulfur than pyrite, the Dorr equipment has proved itself capable of producing a usable gas. The expected usage of pyrrhotite concentrates is 25,000 net tons annually—dry basis, producing 9000 tons of sulfur equivalent in the form of SO_2 gas.

"By-product Calcine will result in approximately 21,000 tons. It is expected that a market will be developed for this Calcine, which may be sintered (agglomerated) to form a high-grade iron ore similar to hematite and magnetite. The pure iron content of this ore will be 65% which is higher than the normal ore mentioned above."

The action of Brown Co. is the first definite step taken by any company in the pulp and paper industry in the U. S. toward securing supplemental supplies to the seriously short brimstone (see "The Sulfur Crisis," March, 1951, "The Sulfur Cloud," May, 1951, and "Sulfur Situation," July, 1951). As *PULP & PAPER* has pointed out, there is scant hope that enough new deposits of native sulfur can be found to meet the rising demand, and it is necessary to develop production of sulfur from sources other than brimstone.

accessible all of the great woodlands of this country would make it possible to practice better cutting; and easier to combat fires and disease.

Of the many honors bestowed upon the 83-year-old forester during his visit in the United States, the most recent was the dedication of 40 acres of redwood trees near Orrick, Calif., as the "Carl Alwin Schenck Grove" on July 4, and the naming of the 200,000 acre Millicoma Forest Tree Farm near Coos Bay, Ore., as the C. A. Schenck Working Circle," on July 7.

Dr. Schenck visited the comparatively new Bloedel, Stewart & Welch market kraft pulp mill on Vancouver Island, where there was only a lumber industry on his past visit, and in Seattle lunched with J. H. Bloedel, the founder; R. D. Merrill, head of Merrill & Ring Timber Co., and Capt. Miller Freeman, president of Miller Freeman Publications, including *PULP & PAPER*. They reminisced of forestry developments since the days of Gifford Pinchot, with whom all had early associations.

Sveen-Pedersen Corp. Elects New Officers

Directors of Sveen-Pedersen Sales Corp., 35-41 Eleventh St., Long Island City, N.Y., elected Odd Wennberg president; Paul Easton, vice president and sales manager; William G. Weygand, treasurer, and Newman Lawler, secretary.

The Sveen-Pedersen Sales Corp. was appointed the new, exclusive agent in the U.S. for sales, engineering and servicing of the Sveen-Pedersen Saveall.

Mr. Easton, well known in the industry since 1936, has been sales and service engineer for Hercules Powder, and more recently manager of engineering and sales, Bulkley, Dunton Pulp Co.

Herman L. Berg, who joined the staff as sales and service engineer, has been with the Sveen-Pedersen Saveall since its introduction in the U.S.

Southern Building

NATIONAL CONTAINER CORP. is building a 100,000 square foot \$600,000 box plant in Dallas, Texas.

TRINITY BAG & PAPER CO., New York, has bought a 30 acre site at Yulee, Fla., near Jacksonville, Fla., and will build a 100,000 square foot floor space plant there.

CROSSETT CHEMICAL CO., Crossett, Ark., has awarded a contract to Rust Engineering Co., Birmingham, Ala., and Pittsburgh, Pa., for erection of a \$150,000 for production of whole tail oil from black liquor skimmings. The plant is to use only two employees.

ST. REGIS PAPER CO. will erect a new office building at Pensacola (Cantonment), Florida, mill.

THE MEAD CORP. finally announced plans for erection of its \$21,000,000 pulp and paper mill at Rome, Ga., for which a certificate was issued weeks ago. The actual site is reported as near Cave Springs, west of Rome. Coincidentally with this announcement, Scott Paper Co. announced plans for a mill at Evadale, Texas. Both companies are joint owners of Brunswick Pulp & Paper Co., Brunswick, Ga.

END OF GERMAN FORESTS

German forests were so badly depleted during the war, and these resources are continuing to be so drained that there is absolutely no salvation for them or hope of their return as an important resource of the country, Dr. Carl A. Schenck (shown in picture), internationally known forester, told *PULP & PAPER*, in an exclusive interview in New York City shortly after his arrival in the United States.



Dr. Schenck, whose home is in Lindenfels, Germany, is currently in this country as a guest of the American Forestry Association. He founded the Biltmore Forest School in the Pisgah National Forest, near Asheville, N.C., in 1896—the first school of forestry in the U.S.—and is being honored on this visit by the dedication of a grove of Redwood trees in his name, near Orrick, Calif., and the dedication of a reforestation project of the Vermont Forest and Farmlands Foundation.

Before the war, Germany had to import one-third of its timber requirements, Dr. Schenck said. With its defeat, the

country now has not the exchange to import any of its requirements, so that the forests must continually be depleted to meet the demands for lumber and pulp. The forests are further decimated by the fact that wood has to be substituted for coal as a fuel. These drains on what was once an important resource of the country have continued so long that there is now no hope that the forests can ever be rebuilt. Dr. Schenck sadly concludes.

The necessity to make the best use of what timber resources are left has led, however, to some important developments. Dr. Schenck pointed to the use being made of a formerly despised species, beech, for the manufacture of dissolving pulp for rayon, for making of veneers, and for use as railroad ties. And as a by-product from its pulp manufacture the Germans have been getting important yields of yeast and alcohol.

For the American forester, Dr. Schenck warns against the adoption of rigid rules for cutting and planting. "Treat every patch of woodland according to its own individual merits," he said. "Forestry must have good soil; good trees; and sound and adequate investment in access roads." Dr. Schenck emphasized. This matter of accessibility is a lesson that must be learned in this country, he feels. To make

THE PULP SITUATION

39,000,000 TONS OF PAPER BY 1975

By **Lawson P. Turcotte**
President, Pacific Coast Assn. of
Pulp and Paper Mfrs.

Important excerpts from his address at National Supts. Convention in Portland, Ore., June 27, 1951. He praised the superintendents for their part in developing new industries of the U. S. in South and West, particularly in the past 25 years, and said:

Many of you will remember when Pacific Coast hemlock pulp appeared on the market in commercial quantities, back in 1927. The company I am connected with was one of the first in this field, and I well remember the struggle to get it established. Many mills in the U. S. had enough vision to support this new industry on the Pacific Coast by using its product, produced from a different species of raw material, in some instances packaged in an entirely different manner, and eventually were so converted to the product that many new, fine pulp mills have been constructed in this area.

If we turn to the Southern States, we find a repetition of the experiences of the Pacific Northwest, not so much in pulp production for market, but as an integrated industry. All of us remember the years of study put in by a few men of vision which brought about this great industry in the South.

I think it is well to remind ourselves of the contribution made to the pulp supply in the U. S. by these two areas, which in 1949 provided 70% of the pulp produced in the entire U. S., as contrasted with 30% in 1930, and in the meantime the nation's production had risen from 4,750,000 tons to over 12 million tons, so the relative percentages have a much greater meaning than the figures show. Without these developments the U. S. would have been in a bad way, indeed.

Future Outlook

Increase in population alone in the next 25 years, based on present per capita consumption, will require an increase of 7 million tons of paper production. With new uses being developed for fibers, it is safe to assume that another 7 million tons of fiber products will be required, or a total of 14 million tons in addition to the present consumption of 25 million, or a total of some 39 million tons by 1975.

Thirty-nine million tons of paper, paperboard and other cellulose products, based on present domestic production and imports, would require a domestic production of 20 million tons of pulp as against the present 13 million and a pulpwood consumption of 33 million cords as against the present 21 million cords.

This last figure for pulpwood—it could be higher by 1975—is the meat of the

cocoanut. We want to be sure that we have the pulpwood not only for the next 25 years, but forever. This wood, or its equivalent in pulp, must originate from the North American Continent, as we no longer can count on supplies from other parts of the world.

My opinion is that we are going to have to supply other world markets with our fiber materials, whether it be in raw material form or in finished products.

If we now refer to the volume of timber on commercial forest lands of the U. S. and take figures based on a re-appraisal by the U. S. Forest Service in 1945, we find the following facts:

If we take a look at sawtimber (which covers all timber 5 inches or over in diameter breast high), there is every sign sawtimber requirements will more and more encroach on what has heretofore been considered pulp timber. According to the reappraisal, there were 1,601 billion board feet of standing sawtimber in the U. S. The removal in 1944 was 54 billion feet which included consumption, fire, insect and disease losses. It was estimated removal was 1.53 times new growth. If this rate remained constant, in 87 years from 1945 the nation's inventory of standing sawtimber would be removed. However, if the trend of new growth as against removal shows the strides that it has made in the past 20 years, this life of sawtimber can be extended many years. The picture of all timber on U. S. commercial lands is much brighter, and shows that removal of timber in 1944, was 13,661,000,000 cu. ft., while new growth was 13,370,000,000 cu. ft., which is pretty close to balance.

But we must take into consideration increasing demands for fiber products through continuous population increase, new uses for fiber, and probable demand on North America by other countries.

In 25 years the combination of these demands could well call for an increase of 65% in wood fiber requirements.

To assure continued equalization of

growth and increased usage of timber, I think these further constructive steps are possible:

1. Constant research by public and private bodies to provide for use of new and untried species of wood in the manufacture of finished fibers.

2. Return to private ownership of state and federal logged-off lands, where these holdings are intermingled or contiguous to substantial private ownerships, provided the private ownerships in question are being reforested in a proper manner. This will make for more efficient management of these lands.

3. Continued and increased efforts by both government and private ownerships to combat the ravages of fire, insect, and disease in timber holdings. A lot can be accomplished by development of access roads into government ownerships.

4. A realistic nationwide tax program for logged off lands which will encourage private owners to recrop and keep these lands under active reforestation.

5. Greater recognition of the importance of highly specialized forestry personnel, both in government departments and private industries.

In conclusion, I quote a statement by Colonel W. B. Greeley, nationally recognized forester:

"The cycle of forest growth, harvest and use goes on, the first old trees are gone, but the forest is here to stay."

Let us back up these words by actions.

Serious Supply Problem in Britain

In his address to the annual meeting of the Bowater organization in London recently, Sir Eric Bowater, chairman, emphasized the seriousness of the raw material supply situation facing his company's operations and outspokenly criticized Scandinavian pulp producers for advancing prices.

"The whole question of raw material supplies is the cause of very real anxiety," said Sir Eric.

New Certifications For Tax Amortization

Certificates of necessity for accelerated tax amortization for new or expanded defense facilities in the pulp and paper industry approved by the Defense Production Administration since the July listing by *Pulp & Paper* include:

| Company | Product | Amount Certified |
|--|----------------------|------------------|
| Camp Mfg. Co., Franklin, Va. | Pulp-kraft paper | \$ 5,978,462 |
| St. Mary's Kraft Corp., St. Marys, Ga. | Pulp-kraft paper | 1,842,464 |
| Olin Industries, Inc., New York | Cellulose | 17,439,000 |
| Rayonier, Inc., Fernandina, Fla. | Cellulose | 2,985,535 |
| Chesapeake Corp. of Va., West Point, Va. | Woodpulp | 703,779 |
| Container Corp. of America, Los Angeles | Containers | 904,000 |
| National Gypsum Co., Buffalo, N.Y. | Board liner | 3,497,625 |
| Peter J. Schweitzer, Inc., New York | Insulating paper | 457,168 |
| Champion Paper & Fibre Co., Hamilton, O. | Bleached woodpulp | 1,697,643 |
| Sonoco Products Co., Hartsville, S.C. | Paper and board | 520,000 |
| The Eddy Paper Corp., Chicago, Ill. | Paper and board | 705,700 |
| The M&G Co., Green Bay, Wis. | Pulp and Corrugating | 534,597 |
| Paperboard Co., San Bernardino, Calif. | Paperboard | 2,175,000 |

Cut Your Downtime
on mill roll changing
to **1 Minute or Less**

with the **NEW B & S**

SHAFTLESS BACKSTAND

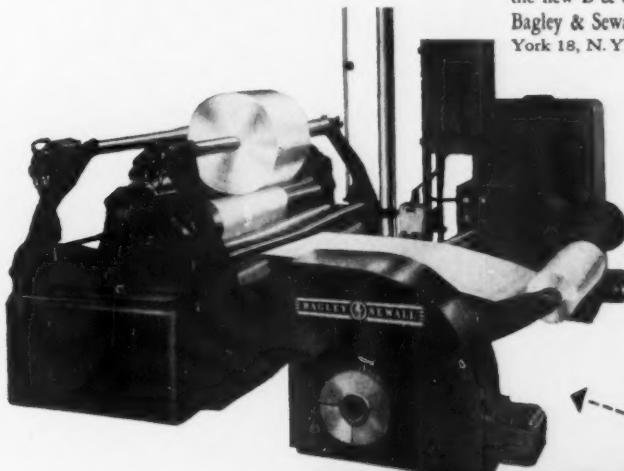
Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I be-

lieve that changing rolls with this Backstand can be brought down to well under one half minute."

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.



**THE B & S
#55 SHAFTLESS BACKSTAND**
features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

designers and
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Convention Screenings

NEWS AND NOTES ABOUT PEOPLE

Attendance Breakdown Figures Are Interesting

Total registration for the National Superintendents Convention set a record for any industry meetings held outside of New York and Montreal on the continent.

A total of 888 persons was registered. This included registrations for all of the events which extended over five days. Many western mill men or others had partial registrations if they were able to attend less than the five days.

Even the full registrations set a new record for Superintendents' conventions. There were 155 supply firms represented and 95 pulp and paper companies—the latter comprising 85 in the U. S., 9 in Canada, 1 in England.

The story as to the full registration follows:

Full registrations at the Superintendents' Association National Convention in Portland, Ore., in late June, set a record for that organization by officially reaching a total of 706, which compares with 680 at Chicago last year. If it had not been for the United Air Lines strike, it would at least have gone over 800, as many Midwestern, Eastern and Southern industry men were forced to cancel out, as in these busy times they could have allotted only enough time to make the long trip by air.

Here's the breakdown of registration:

284—Mill men and wives or other members of their families, from U.S. and Canada.

422—Others, including supply and equipment men and their families.

Other breakdowns:

77 mill men from East; 88 from West; 44 mill men's womenfolk from East; 49 from West.

132 supply and equipment men from East; 146 from West; 54 of their womenfolk from East, 62 from West.

Between the start of preregistration and opening of the convention, there were 194 cancellations. It is estimated that of these, 100 to 125 persons cancelled out because of the airline strike.

Attendance at various functions:

Gold—80 men, 20 women.

Woods trip—430.

Mill visits—Longview, 65; Camas, 85; Oregon City-West Linn, 62.

Trip to Mt. Hood—203 women.

Portland Sightseeing Tour—60 women.

Affiliates Dinner—137.

Chuck Wagon Buffet—626.

Pepplers Breakfast—415.

Men's Luncheon (Wed.)—376.

Men's Luncheon (Thurs.)—360.

Women's Luncheon (Thurs.)—175.

Banquet—734.

The mayor of Detroit has already issued a warm personal welcome to the Superintendents Association for its next annual national convention, to be held July 17-19, 1952, at the Book-Cadillac Hotel in the great motor car city. With the Detroit News as one of the group of newspapers which own the Michigan Paper Co. of Plainwell; with the Ford Motor Co. operating its own unique auto panel pulpboard plant at Dearborn, and with Detroit Sulphite and other mills in the vicinity, its success is assured. President Glen Sutton, a Michigander himself, has been officially assured that there will be no other major conventions in Detroit that week. It will mark the return of the Superintendents to their convention hotel of 26 years ago....

A revealing sidelight on the kind of folks who make up this industry was an enthusiastically-given \$92 collection just for the dining car cooks on the special train from Chicago to the Portland, Ore., convention. The happy cooks said they had never had such an experience before....

Despite an enforced business trip on convention eve, which took him all the way to the Fraser mills at Edmundston, N.B., and Madawaska, Me., with Art Neubauer, superintendent of furnish, coating and sizing in the big CZ Camas mill, Gus Ostenson, as general chairman, organized one of the smoothest-running conventions ever held. And to cap it off, the Camas manager of paper manufacturing went out on the championship Alderwood 72-par course and put together a 38 and 40 for a winning score of 78 in the convention golf tourney....

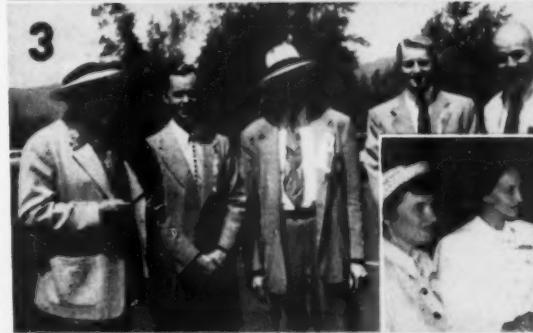
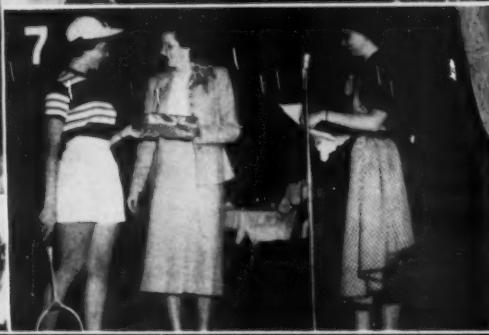
The convention generally didn't know it was going on, but a total of 53 delegates signed up and chipped in their bit to send a warm telegram of good wishes to Lou Breyfogle, Draper's Midwest man, who was seriously ill in Kalamazoo with a liver ailment. Incidentally, one of his two nephews who operate the big Alton Box Board mill, Howard Breyfogle, mill supt., was at Portland. He and his brother, Roy, v.p. of manufacturing at Alton, were both formerly at the Eddy and Standard (Sutherland) mills in Michigan....

And, of course, it was a competitor, C. J. "Mike" McMahon, of Appleton Woolen, who hustled from the top to bottom floor of the Multnomah to get the signatures. Mike and Mary, known to nearly every papermaker in the Midwest, had a wonderful trip, taking along their lovely blonde daughter, Gertrude, President Westbrook Steele's secretary at the Institute in Appleton. And with her was Margaret Frank, a blonde chum from Rosary College in River Forest, Ill. The McMahon family visited Mike's sister-in-law, Gertrude Lynd, widow of Garry Lynd, industry salesman, who was killed in Cheboygan, Mich. She lives in San Francisco....

Martin J. (Martie) Auchter, vice president in charge of manufacturing, Hoberg Paper Mills, Green Bay, Wis., who became the new "last man on the totem pole" in the association hierarchy—he was elected fifth vice president—was born in Milwaukee in 1906; was graduated from Marquette University in electrical engineering. Worked at Allis-Chalmers before college and during summers, but went right to

CONVENTION SCENES ON OPPOSITE PAGE:

1. Fred Boyce, of Wausau, Wis., founder of association back in 1919, wears Indian chief's headgear presented to him at Multnomah Falls, with Gertrude McMahon, daughter of Mike McMahon of Appleton, and secretary to Pres. Westbrook Steel of Institute of Paper Chemistry, on left; her college chum, Margaret Frank of Chicago, on right.
2. A more placid Fred Boyce in this picture with the Supts. 1950-51 Presy. Charles E. Ackley on left; 1951-52 Presy. Glen Sutton, on right.
3. Convention arrangements committeeman who met train at the Falls, l. to r.: John Fulton; Gus Ostenson, general chairman; Mr. Ackley; Don Osborn, Bob True.
4. The Startup Crew for the machine which blew up in a frenzy of hilarity at Peddlers' Show, l. to r.: Fred Alsop, Milt J. Maguire, Bob True, Bob Baer (a "Potlatch Indian"), Herb Beck, Walt Salmonson, and Supt. John Fulton.
5. Board of Directors who witnessed the attempted startup, l. to r.: Harris Fenn, Burke Morden, Ray Smythe (Chairman Clagfoot), Gob Des Marais, Dave Fulton.
6. Mrs. Charles Ackley (right), of West Linn, Ore., wife of the President, received gift of fancy tea set while her daughter, Mrs. J. W. Weiblein (he's at Columbia River Mills) holds a cup for picture.
7. T-shirt and shorts worn by Janzen model, was prize at ladies' outing at Timberline Lodge on Mt. Hood and the model is presenting duplicate outfit in package to Mrs. Robt. Wolfe of Portland.
8. Committeewomen who staged show and women's events, l. to r.: Mesdames E. G. Drew, Pete J. Onkel, Robt. Baer, J. M. Fulton (her husband chairmanned ladies' events), John McKechnie, W. W. Clarke.
9. Mr. Ackley, with pool-hall stick over shoulder and pulling lever with other hand, threw switch that blew up this stage machine in show where he was initiated as honorary member of Brotherhood of Migratory Peddlers.
10. Bob Petrie, wearing badge, is shown here busily getting 12 buses started off for woods tour. He arranged all transportation for various trips. Skag Dunn of Fibreboard mill, East Antioch, Calif., is at left.





1. This unusual picture groups five Past Chairmen of Industrial Affiliates Committee of Supts. Assn., l. to r.: J. W. "BUMPS" HEMPHILL, John-Manville, who founded Affiliates and was first Chairman, '41-'43; NORM WEIL, Tyler, '44-'46; ALLAN HYER, Bagley & Sewall, '50-'51; W. K. METCALF, J. O. Ross, '51-'52; FRANK FROTHINGHAM, Bird Machine, '49-'50.

3. MEN'S LUNCHEON GROUP of 2nd Day, l. to r.: CHARLES E. ACKLEY, retiring Pres. of Supts., who presided; HON. MATTHEW W. HILL, Wash. State Supreme Court Justice, who delivered inspirational address on Americanism (see page 45, July issue), and ALBERT (Al) WILSON, Editor, PULP & PAPER, who introduced Judge Hill.

2. ONLY TWO MEMBERS OF AFFILIATES committee present at convention were ARNOLD PLIER, Exec. V.P. of D. J. Murray Mfg. (left) and BURKE MORDEN, V.P. of Morden Machines (center), shown with HARRY WESTON, Secy.-Treas. of Supts. and of Affiliates.

4. PROMINENT at sessions (l. to r.): New President, GLEN SUTTON, (Sutherland Paper) of Kalamazoo; RADFORD RUSSELL (Everett Pulp & Paper), Technical Program Chairman; and Past President RAYMOND BARTON (Michigan Paper), elected to new 3-year term as Trustee of Association.

Hoberg after college in engineering dept. Promoted to superintendent of power; chief engineer; assistant general supt. and chief engineer; v.p. in 1946. Wife, Emma, also from Milwaukee; they have three boys and one girl, ages 8 to 16. . . .

Allan Hyer, v.p. and sales manager, Bagley & Sewall, attended his 28th convention in a row, and few there are, if any, who might match that record. Mr. Hyer, who held the high trust of heading up pulp and paper machinery allocations for WPB in World War II, has gone back to Washington temporarily, to serve as consultant in reorganizing the present defense set-up for this industry. This time he is not seeing any applications, however; just helping to bring the system into order. . . .

Other personal news notes picked up during the convention week in Portland, as space permits:

Gerritt G. DeHaas, of the Weyerhaeuser Pulp Division's research lab, who co-authored and gave the paper on stabilization of Douglas Fir kraft black liquor, was raised in Holland, did his graduate work in Zurich, Switzerland. When Hitler invaded the Low Countries, Mr. DeHaas escaped in London, and did considerable work there on hydrolysis of wood for sugars and alcohol. His paper was a fitting technical sequel to our exclusive article on the Bergstrom Tower installation at Weyerhaeuser's Springfield, Ore., mill.

Never has a technical session had quite the hilarious experience as the one at which Jack Savage, fun-loving superintendent of the C-Z mill at Camas, pulled

out a crystal ball and cup of dice from under the table during the question-and-answer period. Someone had asked him how he extricated himself from a chaotic situation in the intricate Camas system of mixing pulp grades.

J. D. Dailey, kraft pulp mill superintendent of Coosa River Newsprint Co., acquired a cowboy outfit in the West, including a gun for his son, John. We should write that name just "J D Dailey" with no periods, for he has just initials only for first two names. Few men have started up as much new kraft production as J D—it was his job at the LongLac and Red Rock mills in Canada. Born in Mississippi, he started at Gaylord, went to N. C. Pulp.

Glen T. "Tiny" Renegar, general supt. at Container Corp. of America's biggest mill of all in Philly, saw his Penn.-N.J.-Del. Supts. Division grow from a handful to over 300 at the Easton meeting we reported last month. Born in Indiana, he got his start in Carthage, N.Y., and has been 20 years with CCA. . . .

Art Gardner, superintendent of No. 2 mill for Champion, Hamilton, O., revealed

Ackleys Extend Thanks

Charles E. Ackley, retiring president of The American Pulp & Paper Mill Superintendents Assn., and Mrs. Ackley, officially extend their personal thanks and appreciation to members of the convention committees and to the many friends in the pulp and paper industry and allied equipment field for attending and participating to make both business and social functions at the recent national meeting in Portland, Ore., so successful. "We are very grateful for the many courtesies extended to us, and they will always remain in our memory in days to come," said Mrs. Ackley.

he has been there 41 years now and so he thinks he has a steady job. . . .

H. B. Reilly, recently technical director for the new Weyerhaeuser mill at Springfield, Ore., found many old friends from his years as technical director for Brown Co., Berlin, N.H., and in research at Champion's Texas mill. He continues to live at 1805 Longview St., Eugene, Ore., while deciding on future plans. . . .

For first time in 11 years Joe Scheuermann, Bagley & Sewall, and his wife, Myrtle, came to a convention without their daughter, Yvonne, now Mrs. Jack Vanderberg of Kalamazoo. Reason enough that "Bunny" couldn't come—she has a daughter herself, Susan, just six months old. . . .

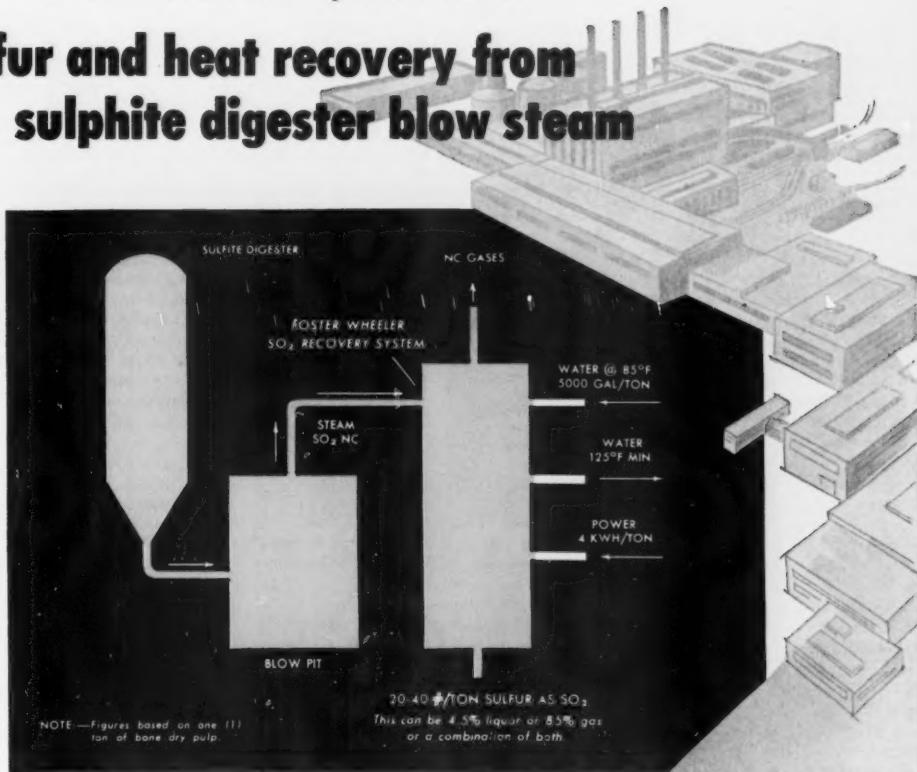
James P. Rubush, Impco's western man and international known evaporator designer in his own right, has a substantial orchard business, too, at his Wenatchee, Wash., 40-acre ranch home of apples, pears and apricots. Was onetime chief engineer at Central Paper, and gen. supt. at Filer Fibre in Michigan. . . .

Norm Weil of Tyler, who habitats Yonkers, was mightily impressed with the West, but his biggest surprise was gathering in \$2,150 anonymously, given by salesmen for the Get-Together Party, and as perennial chairman of that event, he's in a position to compare it with past years. . . .

The Migratory Peddlers shows are becoming such finished works of art, some members think in future years they should let the wimmin enjoy them, too. John Martin Fulton and Ray Smythe trod the boards in the Mansfield manner; as ped-

a Foster Wheeler system for . . .

sulfur and heat recovery from sulphite digester blow steam



The shortage of sulfur in the pulp and paper industry may now be lessened as the result of the development of an effective Sulfur Recovery system.

The system illustrated above embodies Foster Wheeler's long experience in the design of successful heat and chemical recovery equipment and promises as much as 20 to 40 lb of Sulfur Recovery from one ton of pulp.

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A LARGE GROUP CAME FROM THE SOUTH to attend the Portland, Ore., convention—here are only a few (l. to r.): J. D. DAILEY, Kraft Mill Supt., Coosa River Newsprint Co.; HANIE JONES of St. Petersburg, Fla., who represents Manhattan Rubber and other companies; GEO. HARDAKER, Lockport Felt's Southern man from Asheville, N.C.; HARRY W. DEFFEW, V.P. and Supt., Standard Paper Mfg. Co., Richmond, Va.; JOHN FLEMING, V.P. of Fleming & Sons, papermakers of Dallas; Mrs. FLEMING; ALBERT HENTSCHEL, Supt., Flintkote Co., New Orleans; and BUNN BEASLEY, Sec'y. and Gen. Supt., Brown Paper Mill Co., West Monroe, La.

ders, the stage has lost two great Thespians, all agreed. . . .

Punch lines of Peddlers' show:

"Supt." Fulton: "Charley Ackley, it's pretty apparent you are not a paper-maker." (When he threw a switch to start a stage paper machine and it blew up, the audience howled.) Referring to an Indian Papermaker from Potlatch (Bob Baer, of Griffith Rubber): "He taught me the darnest set of signals for starting a machine you ever saw!" "Board Chairman" Smythe: "Our pulp is the finest hogged fuel we could buy." Another Fulton gem: "But, Mr. Clagfoot, a superintendent isn't supposed to know anything; that's why he's a superintendent." And regarding qualifications of a prospective operator: "We investigated his consumption of waste liquor, and he never wastes a drop!"

Olin Callighan, Migratory Peddler of Kalamazoo and chairman of the Michigan division, already is making plans for another Peddlers' show at Detroit. . . .

Ray Harter, now Vanderbilt's manager of sales, lives on Toilsome Avenue in Norwalk, Conn.—a good street name for him. His comrade in many Southern travels, George Hardaker of Lockport Felt, has a



NEW 5TH VICE PRESIDENT of assn.: Milwaukee-born MARTIN J. AUCHTER, Vice Pres. of Mfg., Hobart Mills, now headed for Supts. Presidency in five years.

son, Albert "Tink" Hardaker, working under Ray. Mr. and Mrs. George H., who live in Asheville, N.C., enjoyed their introduction to the West. . . .

Some Portland places could have used a few punkah wallahs in the 95° temp., but delegates agreed the Multnomah was the coolest spot in town. J. W. "Bumps" Hemphill, Johns-Manville, and the founder of Industrial Affiliates, came without the Mrs., and maybe that's why he fell prey to a virus attack, but he made a splendid recovery. . . .

Tom Scarfone, Pacific Coast Supply's expert for Cameron and E. D. Jones, re-

THE GREAT MIDDLE WESTERN INDUSTRY AND AFFILIATE ENTERPRISES WERE WELL REPRESENTED at the Portland Convention. For example, there were (top row, l. to r.): IRVING McNAIR, V.P. and Mgr. of Mfg., The Northwest Paper Co.; LARRY MURTFIELD, Pulp Supt., Consolidated W.P.&P. Co.; DAVE DeZURIK, DeZuriq Shower Co., Sartell, Minn.; MACE HARRIS, Mgr., Pulp Mfg., The Northwest Paper Co.; MALCOLM WRIGHT, Gen. Supt., St. Regis, Sartell, Minn. (who was born in Mechanicville, N.Y., and, naturally, started with West Va.P.&P.); RUSSELL LEWIS, Asst. Tech. Dir. in charge of quality control, Ohio Box Board. Lower row (l. to r.): LES LaLIBERTE, Supt., KVP Co.; HOWARD GERBER of Williams-Gray Co., Chicago, and Mrs. Gerber; LEO FITZGERALD, Hercules Powder Co., Chicago; J. R. SIMPSON, coating expert for Champion Paper, and ALFRED B. PERLICK, Stock Preparation Supt., KVP.



vealed he is building a home in Milwaukee (spelled with two i's), Ore. His wife, Betty, ceased to be a bride as of July, the start of their second year of marriage. . . .

Thurston Yocom, ex-Camas researcher in charge of experimental pulping, who now tours central and eastern U.S. for E. D. Jones, admits ruefully it took a slight car accident to accustom him to eastern traffic. He and his wife, Marge, also from Camas, live in Dalton, Mass. . . .

Ross's President, Sam Fletcher, an old MIT grad; W. K. Metcalf, new Affiliates chairman; R. W. Morsch from California and one or two others, were on hand, but missing was their western sales manager, A. E. "Monty" Montgomery, v.p. and western manager, on a vacation in Switzerland climbing mountains. . . .

Also abroad was D. Manson Sutherland, in England seeing about refiner installations in Europe and South Africa, but one of his sons, Lionel, was on hand to uphold the Portland end. . . .

Harry and Mary Deffew—he's v.p. and supt. of Standard Paper in Richmond, Va.—drove west for the first time and his first vacation in a long, long time. He said it was the first real one since he joined Standard 30 years ago. . . .

Reunion for some of the La Liberte family. Les La Liberte, Mill 2 supt., KVP, and his wife saw their nephew, Robert, who had been in Portland over a year as coast rep. for Lakeside Laboratories of Milwaukee (drugs for m.d.'s). He's son of Reuben La Liberte, tour foreman, Kimberley-Clark, Niagara, Wis., and, of course, grandson of the late Joe La Liberte, veteran papermaker of Niagara, Wis., who died last December. . . .

A little Englishman who made a lot of friends at Portland was John Tweedie, director (which means manager over there) of the Wansbrough Paper Mills, of Watchet, Somerset. Real Somerset men call it "Zummerzet," but maybe Mr. Tweedie wasn't a real one. . . .

A. P. "Tony" Siebers, formerly of Thilmany, Longfibre and Weyerhaeuser, recent supt. at Springfield, Ore., is building a home at 1847 Nichols Blvd., Longview, Wash. He and his wife, Cecelia, are now six times grandparents, but with all five of their children wed, that's probably not the end. . . .

Alfred Montagna, chairman of the Connecticut Valley Supts., revealed he has



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On all classes of industrial equipment are certain makers' names that are universally associated with the ultimate in character and quality of product. On Air Handling Systems—for heating, cooling, controlling and conditioning air—that name is ROSS. The new ROSS name plate (pictured below) on a piece of plant equipment will identify that

plant as one where the most modern and efficient methods are being utilized to insure the finest quality of finished product. It is the symbol of an accurately engineered, carefully constructed piece of apparatus designed to completely fulfill the ROSS high standard of performance.

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AMONG LEADING ADVISORS to the Supts. Assn. are these four: Top (l. to r.): HOWARD H. HARRISON, Vice Pres. in Charge of Mfg., The Crystal Tissue Co., Middletown, O., elected a Director for one year; HOMER LATIMER, Dir. of Papermaking, Champion Paper, and a Past Pres. of Assn. Below (l. to r.): FRANK ZELLERS, Mgr., Chillicothe Paper Co., a Past Pres., and ROY H. KELLY, Res. Mgr., Marathon, Rothschild, Wis., an early organizer of the assn., also elected Director for one year.

been 30 years with Southworth in West Springfield, Mass., which makes typewriter paper, starting as a boy out of high school. . . .

One of the youngest delegates from the Midwest, blond Russell Lewis, who is assistant technical director in charge of quality control at Ohio Boxboard, Rittman. . . .

Alfred B. Perlitz, stock preparation supt., KVP Co., Parchment, Mich., and his wife, took their daughters, Margaret 19 and Mary Ann 17, to their first night club (Amano's) in Portland. The family drove west in a new car, had to detour the Kansas floods. . . .

Mgr. Malc Otis and others from C-Z, West Linn, Ore., told how their retired ex-paper mill supt. is becoming very proficient with the paint brush. Still lives at West Linn and is very active in Red Cross and Community Chest. . . .

Ohioans were happy to report that Ken Geoghegan, TAPPI national president, was back on the job as v.p. of Howard Paper Mills, Dayton, O., after major surgery. . . .

Mr. and Mrs. Dave DeZurik weren't the only Sartell, Minn., folks on hand. There was also Malcolm Wright, general supt. for nine years of the mill there, which now belongs to St. Regis. Mr. Wright was born in Mechanicsville, N.Y., worked for West Va., I.P. and Consolidated Water Power & Paper. . . .

Frank Frothingham, Bird Machine, headed for California after the meeting. He is an ex-Affiliates chairman. Sven Fahlgren, who took his wife west, stayed in the Northwest to visit mills for Bird. . . .

Convention was part of honeymoon for C. W. "Hap" Felt, of Seattle, who assists



FOUR PERSONALITIES FROM FAR-SEPARATED POINTS who attended Supts. Convention (l. to r.): MRS. DAN (VERNICE) CHARLES, President of Charles Agency, Seattle, which represents Moore & White, Lodging, Knox Woolen, Noble & Wood, etc., on Coast; TOM RIDER, Sales Mgr., H. Waterbury & Sons, Oriskany, N.Y., and JOHN TWEEDIE, Director of Wansbrough Paper Mills, Watchet, Somerset, England.

Vernice Charles in representing Knox felt and other lines out west, and his bride, former Miss Helen Fox of Vancouver, B.C., ex-secretary to the late Hugh Lewis, former exec. v.p. of Sorg Pulp. They were married June 23, just the day before the convention started. . . .

Burke Morden, vice president of Morden Machines Co., Portland, Ore., had to wait all these years to come down with the measles just before the convention, and in midst of his big job as housing chairman, finding rooms for, and registering all delegates. His two boys caught the measles and passed them on to father.

Freddie Armbruster, son of a late famed pulpemaker from the equally famous Cherry River mill, Fraser and Soundview mills, went to Portland for Dow Chemical. Fred had just received word of his election as Pacific Northwest member of the Forest Products Research Society board of directors. . . .

SELECTED AS NATIONAL CONVENTION HOTEL for the Superintendents Assn. in 1952—The Hotel Book-Cadillac in Detroit, where the association met in 1952.



MIDWEST AND FAR WEST MILL MANAGERS meet at convention: HARRY E. HADLEY (left), 2nd V.P. of Supts. (to be President in 1953), who manages Gardner Board & Carton mill in Middletown, O., and MALCOLM OTIS, Manager of Crown Z mill at West Linn, Ore.

Arnold Plier, a native Wisconsinite and executive vice president of D. J. Murray Mfg. Co. since 1950, and Burke Morden up when last seen, heading for the Washougal home of Bill Damon, Orr Felt's Pacific Coast man, to try out the Damon backyard fishing hole, where even big fighting steelhead salmon have been caught. . . .

Tom Rider, sales mgr., H. Waterbury & Sons, from Oriskany, N.Y., was booked up when last seen, heading for the Washougal home of Bill Damon, Orr Felt's Pacific Coast man, to try out the Damon backyard fishing hole, where even big fighting steelhead salmon have been caught. . . .

J. W. D. Hierlehy, manager of the Fraser Companies' mill at Madawaska, Maine, wasn't there but conventioneers who had visited him told how he provided his wife with snappy garden party serving trays by salvaging used mild steel tops of color barrels at the mill. Tops already have raised steel edge around them.

Convention gave Gordon Morseth, of Detroit Sulphite Pulp & Paper, a chance to visit parents and relatives in Everett, Wash., where he started. He drove west.

Bunn Beasley, Texas-born general supt. of Brown Paper Mills Co., revealed he has given up golf for fishing—quite something for Bunn, who is only man who ever won three successive golf championships at national supts. conventions. Claims in 30 days he can fish 30 different fishing spots within 30 miles of Monroe, La., and almost catch that many kinds of fish. . . .

Bunn said D. C. Metcalf, pulp supt., Brown Paper Mills, vacationed this year in Canada. He had gone South to work



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WOOD PULP PAPER



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RANDOM SHOTS AT CONVENTION (Top, l. to r.): WALTER P. MURRAY, Chief Eng., and J. B. HAMMETT, Sales Mgr., Mt. Hope Machinery Co., Taunton, Mass., on their first Far West jaunt; CLAUD KELLEY, Paper Mill Supt., C-Z, Port Angeles, Wash.; ALFRED MONTAGNA, Chairman of Conn. Valley Supts. and Supt. Southworth Co., W. Springfield, Mass.; JERRY STRASSER, Sales Mgr., Morningstar-Nicol, New York; WALT SALMONSON, Coast Rep., with Mrs. RALPH E. BRIGGS and Mr. BRIGGS, Sales Mgr., Draper Bros., Canton, Mass. Below: FRED BOYCE, Pres., D. J. Murray Mfg. and Founder of Supts. in Chinese Paper Makers festivities in the basement "ship" Hippy-Dip in West Linn, Ore., home of CARL E. BRAUN, V.P. of Publishers Paper Co. (in sailor cap at right), with "GOB" DES MARAIS, Pac. Coast Mgr., General Dyestuff (in center). Next view shows WM. E. GREENE, Chairman of Wm. E. Greene Corp., New York, being greeted by Mrs. CHAS. ACKLEY, wife of Supts. President. Right: ALBERT S. QUINN, Pres., Stebbins Engineering Corp., Seattle, helping load and start buses on woods tour.



THIS IS AN ARTIST'S VERSION OF THE GOOD SHIP HIPPY-DIP, a free-wheeling version of the "base-ment ship" in the West Linn, Ore., home of CARL E. BRAUN, Vice Pres. of Publishers Paper Co., where over 60 pulp and paper mill men and affiliates attending the Convention were his guests. Mr. Braun, a World War I navy radio operator, is an ardent radio ham and his call signals are shown on the flag. The entire basement of his home is equipped and decorated like a ship.

from Canada, where he used to be at the old Brompton mill. . . .

Mrs. Raymond L. Barton, whose husband, Ray, was elected to a new 3-yr. term as one of the association's three top trustees, was heading to the east coast as soon as she got back to Plainwell, Michigan, from the Pacific. Mr. and Mrs. Bill Astle and their two daughters and Mrs. B. were heading for the old home of the two families, Groveton, N. H., where Ray and Bill were born and got their start in the old Odell Mfg. Co., now Groveton Paper. Ray was chief chemist;

Bill his assistant. Now Ray is general superintendent at Michigan Paper; Bill, who worked seven years at Camas and Oregon City, is beater room superintendent at Michigan. . . .

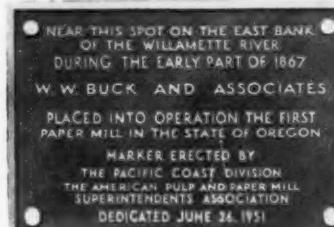
That was an authentic high-ranking Nez Perce Indian bonnet which Charley Ackley, of C-Z, West Linn, the retiring president, dug up and presented as a gift to Fred Boyce, the association founder and now trustee. . . .

Bill Brydges, third trustee of the association, was reported ill with virus pneumonia at his Lynchburg, Va., home and unable to attend. He has been won out of retirement to build a one-machine paper mill in for the Atlanta (Ga.) Paper Co., big Southern converting firm. The machine was bought from St. Regis, Kalazamoo. . . .

Hospitality and interesting info given out by the group of young C-Z foresters who served as "barkers" on the buses during the woods tour made a big hit. Chief Forester Clarence Richen and Bert Ross, gen. supt. of the Clatsop Tree Farm, were the organizers. . . .

Hank D. Jones, veteran sales rep. in South for Manhattan Rubber and felt and wire lines, sent his wife, Emma, and their 12-year-old daughter on a cruise to Alaska, but he had to return to his St. Petersburg, Fla., home to work. They missed very little on their first trip West. . . .

Irving McNair, v. p. and manufacturing mgr. of The Northwest Paper Co., Cloquet, Minn., had a chance to visit with a younger member of the McNair family, David, who is with Weyerhaeuser in Longview. Mace Harris, manager of pulp manufacturing at Northwest, was the other divi-



COMMEMORATIVE PLAQUE unveiled at the ceremonies at a ceremony on steps of Publishers Paper Co., formerly Hawley Pulp & Paper, at Oregon City, Ore. The first mill here was Oregon City Paper Mfg. Co. (1867). Franklin T. Griffith, pioneer manufacturer of rubber-covered rolls and industry leader, gave address.

sion chairman in Portland; he and Larry Murtfeldt, pulp supt., Consolidated Water Power & Paper, Wisconsin Rapids, having gone to Portland after putting on a good division spring meeting in Minneapolis. . . .

Jim McAlear, Mason-Neilan's pulp and paper department manager, toured some mills with Instrument Laboratories representative of Seattle, and swapped more than one lobster dinner date in Boston for a salmon one. . . .

Walter Wolfe, Mac Sim Bar Paper Co., showed as much old moxie and spirit as any superintendent despite a series of bad breaks, including a wrenched back from stepping in a hole just the day before he left with Mrs. Wolfe for the west. This led to several days of sciatic attacks. Walter is now wearing an artificial hand in place of the hand crushed in the nip of couch rolls last October, but he is so agile with it, he says that's least of his troubles. An old hip injury, sus-



LAST MONTH WE PUBLISHED photographs of many participants in Technical Programs at National Supts. Convention. Here are others who took part (l. to r. in each row): 1. WALTER WOLFE, Mac Sim Bar Paper Co., Otsego, Mich.; DR. LOUIS STEVENSON, APPA Economist, New York; GLEN RENEGER, Supt., CCA, Phila. 2. LEE HILL, JR., Plant Eng., Weyerhaeuser, Everett; DOUGLAS WADDELL, Tech. Supr., C-Z, Lebanon; GORDON PETRIE, Sharie Bros., Portland. 3. JOHN VICTOR, Asst. Paper Supt., St. Regis, Tacoma; A. E. HANSEN, Asst. Paper Supt., Powell River; GERRIT G. DEHAAS, Research Chem., Weyerhaeuser, Longview. 4. A. G. NATWICK, Asst. Mgr., C-Z, Camas (who read paper by Wm. Beckart); ROBT. BOAZ, Seattle; RAYMOND P. HILL, Chemical-Proof Construction, Seattle. 5. ARTHUR PALMER, Gr'd. Supt., C-Z, West Linn; WM. FARLEY, Asst. to Wood Supt., C-Z, Camas; RAYMOND HOWERTON, Hyster Co., Portland; ARTHUR COLE, Supt., Rex Paper, Kalamazoo. 6. JESSE LEWIS, Op's. Mgr., Coos Bay Pulp, Anacortes, Wash.; J. W. WEIBLEN, Finishing Supt., Columbia River Mills; GERALD F. ALCORN, New Const. Eng., Weyerhaeuser, Longview; W. H. TOCK, Allis-Chalmers, Milwaukee.



Arthur Forsyth and W. B. Donaldson, Jr., of Seattle, says he is doing just as much traveling to mills all over the continent for Buffalo Pumps as he did as an instrument man in past years, and that is some traveling . . .

John Roslund, son of John V., grad of Carnegie Tech, was going to work for GE at the Hanford, Wash., atomic energy plant, and was to be married in Charleston, West Va., in September to a school chum. Another Roslund son, George, senior at Cornell, was on a Canada canoe trip . . .

Gordon Petrie, sales engineer for Black-Clawson-Shartle-Dilts, and one of the young sons of Bob and Lillian Petrie of Portland, made his bow in giving his first technical paper, and his father, chair-manning all transportation, also gave Gordon the lion's share of credit for smooth take-offs of the numerous buses . . .

Two other young men from New England, making their first "invasion" of the west, were Walter P. Murray, chief engineer, and J. B. Hammatt, sales mgr., for Mt. Hope Machinery, Taunton, Mass., whose new free-wheeling expander for paper machines is proving popular. They were under the wing of Steve Thurlow of Charles Agency, whose brother is Rayonier's chief engineer at Port Angeles . . .

Brothers "Bill" and "Russ" Goodwillie and Keith Looker were the Beloit Iron Works representatives at Portland, but one of them called it "home"—for Russ has moved there with his family to be Beloit's first resident representative in the Far West . . .

Being in a plane struck by lightning on his way to the convention was the experience of C. D. Coffman, superintendent of Chesapeake Paper Board of Baltimore, and his wife. It happened over Pittsburgh, where they landed safely. Mr. Coffman was born in Rittman, O. . . .

Ray Wilcox, of Philadelphia, inventor of the Wilcox rubber pinch valve, and his wife, were among those having their first experience in the far northwest . . .

Johnnie Walsh, head of American Cyanamid's paper department from New York, on his second trip into the Northwest, and Shel Dahl, Pacific Coast man-

ager from Azusa, the California town Jack Benny made famous, on his first trip since becoming Pacific Coast manager, had for "local guides" Ed Garrison and Bob Lull, of Seattle and Portland respectively . . .

Miss Margery Wright, secretary of Bagley & Sewall, and her niece had a day at the convention while on a western vacation . . .

Mort Copper of Westinghouse; Frank Hutton of Babcock & Wilcox; Jimmy Foxgrover of Hercules; Charley Barton of Rice Barton; Harry Moore of Beloit, and at least 60 others were forced to cancel reservations because of the United Air Lines pilots' strike—otherwise this convention would easily have gone in even higher record figures . . .

John Natwick, his "peddler" days over as he is now with Central Paper, had another family reunion with Buff and Cece Natwick of Camas and others of the Natwick tribe in the Far West . . .

Hal Harvey, now located in San Francisco as district bulk sales manager for the Pacific territory for Penick & Ford, was raised in Middletown, O., member of the Harvey family originally in the building and organizing of the Gardner mills. Has home now in San Mateo, Calif. . . .

Not many know the Superintendents have a board of directors of 21 members. These consist of the six national officers, ten division chairmen, three trustees and two directors-at-large elected for one year. These were Roy Kelly, manager of the Marathon mill at Rothschild, Wis., which incidentally is experimenting with ammonia pulping, and Howard Harrison, manager of the Crystal Tissue mill in Ohio. Roy was in Portland; Howard couldn't make it . . .

A long way, to be sure, but report reached Portland that Joe Wig, plant engineer since the startup at LongLac Paper & Pulp kraft mill in Terrace, Ont., and Mrs. Wig have a new addition to their family. Joe was a navy officer in World War II, been at LongLac four years . . .

John McEwen, assistant research director, Pulp Div., Weyerhaeuser Timber Co., was interested in any and all sulfur discussions at Portland. He heads up for

tained in a fall off a horse in '48 has bothered him more . . .

Agart Wiberg, gen. supt., Gilbert Paper Co., visited two sons—Edgar, tour boss for Weyerhaeuser at Springfield, Ore., and Roy, chemist for Weyerhaeuser at Longview. Their father, Sweden-born, worked at Oregon City over 30 years ago, before going to Wisconsin to stay . . .

P. Andrew Jackson, Pusey & Jones veteran engineer, was one man who went to the convention on a vacation—paid his own way so he wouldn't have to work!—and all because he wanted to make the woods trip. Two years ago he was all set to go west for the same reason—TAPPI woods trip—but got orders to go to Mexico to put in the new P-J machine at the Macorra San Rafael mill. Andy started with P-J many years ago, then for a 30-year interlude was chief engineer for American Writing Paper and Irving Paper, went back to P-J and was able to pick up right about where he left off "because basic drawings for machines are still much the same" . . .

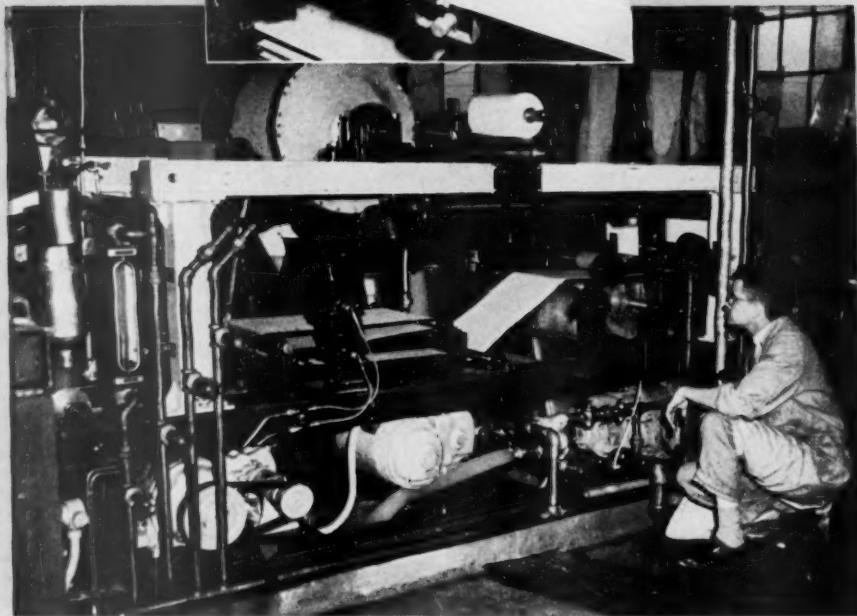
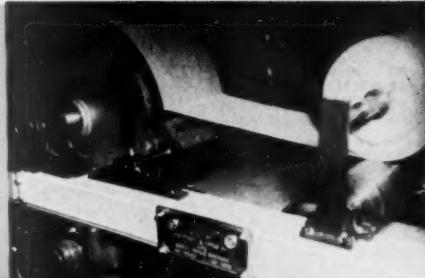
That man taking all the color movies was John V. Roslund, who now has a lovely home on a Portland hill looking out on Mt. Hood (clear days), but who used to call on the Midwestern mills. John showed old Midwest friends color movies he took recently in Sweden. He now represents Asten-Hill, Downington, and others on the Coast . . .

Henry Daty, representing Takahashi & Co., Seattle, who are equipping at least two new Japanese mills with American-made machinery, enjoyed again seeing old paper mill friends he has met in Michigan and other states . . .

John Chandler, holding forth with

Below, 10-inch Pusey-jones Cylinder Tissue Machine. For tissue with a basis weight of 12 to 2800 lbs. per ft., and toweling with 350 to 2800 lbs. per ft. Speeds range from 8 to 20 feet per minute.

At right, close-up showing creping arrangement and wind-up.



Forms toweling and tissue continuously—in the Laboratory

A new experimental machine built by Puseyjones for Scott Paper Company, Chester, Pa., world's largest manufacturers of toilet tissues and paper towels, offers these important advantages over forming samples by hand:

- (1) Permits continuous addition of chemicals
- (2) Permits continuous change of the proportion of chemicals
- (3) Assures close correlation of end sheet results with the production of regular machines
- (4) Minimizes experimental production losses on commercial machines

To permit observation of internal flow and formation conditions, Puseyjones built the Cylinder Vat and Flow Spreader of Plexiglas. The single creping drier is electrically heated, using the radiant heating principle.

Research or production . . . Fourdrinier, Cylinder Machine, Yankee or a combination . . . whatever your papermaking problem may be, the experience and facilities of the Puseyjones organization are yours to command. Write us today.

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Est. 1848 — Builders of Paper-Making Machinery
Fabricators & Welders of all classes of Steel & Alloy Products
Wilmington 99, Delaware, U. S. A.



TAPPI a study of possible sulfur savings for the entire United States industry. . . .

Harris B. Fenn, long-hitting (golf) Pacific Coast manager for National Aniline Division of Allied Chem & Dye, is the new president of the Stanford Golf Club at Palo Alto, Calif., and invites any friends who wants to play a tough, championship course to look him up at San Francisco. . . .

Making many new friends for his company in the West was Harold F. Wood, Jr., for Heppenstall knives of Pittsburgh, who was in tow of Ray Smythe, western rep. . . .

All the special train travelers were loud in praise of the tireless good cheer spread among them by H. A. "Gob" Des Marais, Pacific Coast manager for General Dye-stuff, who went to Chicago especially to serve as the official "reception committee." He led many songs, as usual, and found a good helper in Harry Hulmes of Williams-Gray, famed as the song-leader at Southern meetings. F. A. Turner of Modern Machines, registered everyone on the train before arrival. . . .

Jack Loomis, Calco Chemical manager for American Cyanamid, was day late on account of transportation troubles, but he made it. Bill Marshall of Pacific Coast Supply, accompanied him on mill calls, but Jack was no newcomer on the West Coast. . . .

Despite a lot of cancellations, Pacific Coast Supply had about a score of their "principals" and home office representatives from the East in Portland. John Fulton and his staff were as busy as the proverbial cat, trying to stay on the roof. . . .

Claud Kelley, veteran paper mill superintendent at Crown Z's newsprint mill in Port Angeles, found a lot of old newsprint friends. He was many years at Powell River. And L. W. Heard, engineer now with Longview Fibre, renewed friendships with a lot of old friends from Michigan. . . .

Dick Radsch, sales manager of Appleton Machine, brought the wife to show her many places he had seen before out West. Another old "hand" in the west is Dick Temple, for Moore & White. Well known in the South, he is fast becoming just as well known in the Far West and was interested in seeing their new machine in Longview Fibre. . . .

George Holt, Rayonier's general superintendent at Hoquiam had to rush back to the mill just after his paper, with Jim Sheehy, the vice president and manager at Hoquiam now promoted to manager of all Rayonier operations and moving to New York. Eddie McGill, superintendent at Shelton, however, came down to hold up the Rayonier end and look up some horses for a ride with his old pal, Jim Fraser, supt. at Coos Bay. . . .

Albert D. Merrill, president of Chemipulp Process, Watertown, wasn't able to attend but word reached Portland that he was recently elected trustee of Clarkson College, his alma mater. . . .

Dr. H. O. Teeple, the corrosion expert for International Nickel, hopped from

IN OUR LAST ISSUE—

We published the complete papers or major portions of papers given at the National Superintendents Convention in Portland, Ore. on Metals Allocation; Caustic Plant Operation; Stainless Alloys; Alcohol and SWL; Ammonia Base Mill; Supercalendering; Insulation Board; Hydraulic Barking and Recovery Plant Maintenance.

Richmond, Va., (we published his talk there in our June issue) across the continent to keep up with his subject and found plenty to hear in Portland, with Ray Hill of Pulp Bleaching and Chemical Proof Construction, Seattle, Jack Wilcox and Jim Gow of Esco and Lee Hill, Jr., of Weyerhaeuser, all experting on the subject in important sessions. . . .

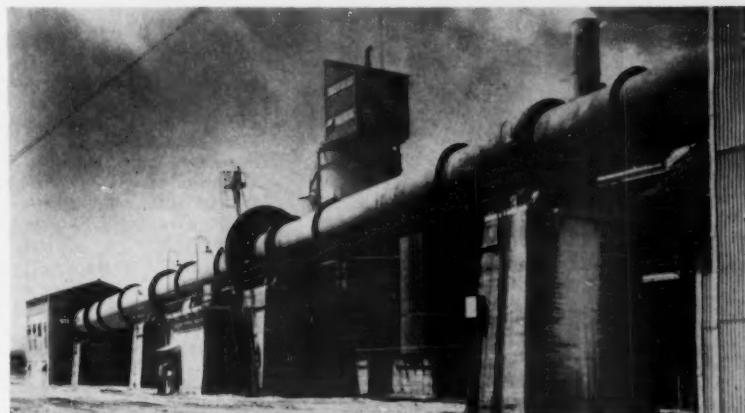
John G. McKechnie, the secretary of Eastwood-Neally, made one of his rare convention visits, but like many others he was primarily on a vacation trip West, and called at the meetings because Al Nyatray wasn't able to go. . . .

Ralph E. Briggs, sales manager for Draper, took out one evening for a reunion with his old friend, Stewart Holbrook, the author of lumberjack stories, who lives in Portland. . . .

Stuart Moir Sees Big Northwest Growth

At the national convention of the Superintendents in Portland, Ore., Stuart Moir, forest counsel for the Western Forestry and Conservation Association, predicted the Pacific Northwest would supply about one-fourth of the nation's pulpwood demands in the future.

Terming the northwest a timber wealthy region, Moir viewed the future of the industry as particularly favorable. The phenomenal expansion of the pulp and paper industry during the past 50 years, which has been at least ten-fold, will benefit the Pacific Northwest, he said. Trees as a home-grown crop on tree farms of the Northwest will furnish at least eight million cords of pulpwood yearly, or about 30% of estimated annual growth of the region.



THE 7 x 8 x 250 FT. LONG ROTARY LIME SLUDGE KILN installed by Allis-Chalmers Mfg. Co. at the new San Joaquin Division of Fibreboard Products Inc., East Antioch, Calif., is an example of kilns described by W. H. TOCK, Allis-Chalmers Engineer, in his talk on operation and maintenance at the Superintendents Convention held in Portland, Ore.

OPERATION AND MAINTENANCE OF LIME KILNS IN KRAFT MILLS

By W. H. Tock

Engineer, Basic Industries Dept., Allis-Chalmers Manufacturing Co.

(Excerpts from his paper presented at Supts. National Convention)

At present, there are more than 70 operating lime sludge recovery kilns in the U.S. and Canada. There is approximately a 50% division between kilns equipped with heat recuperating chain systems and kilns not equipped with chain systems. Of these kilns in pulp mills, about 20 are the long multiple-support type (having more than two supports) and over 50 are the short two-support type. These kilns, in various lengths to over 300 feet, range in diameter from 6 to 11 feet.

Primary purpose of the rotary kiln is to re-burn an otherwise waste product, lime sludge, continuously producing a high quality lime at a uniform rate on an economical basis with a minimum of equipment maintenance. This is minimumized operation.

In many mills, difficulty has been encountered in feeding the kiln at a uniform rate of lime sludge. This difficulty is due primarily to the inability to deliver sludge to the filter at a uniform and constant rate. Control of sludge rate to the filter is attempted through various means with different mills arriving at a particular means considered most suitable. Some of these

methods have been by means of a controlled pump, weir and weir-box, cake thickness gauge, and ferris-wheel feeder which does deliver a constant volume of sludge to the filter.

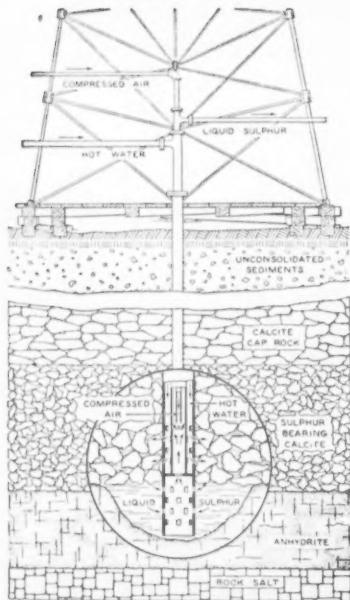
The kiln may be divided into three zones; the drying zone, which is the feed end of the kiln; the intermediate or preheating zone; and the calcining or burning zone. Any change or variation in the moisture content or amount of cake fed to the kiln per kiln revolution will upset operation or balance in all zones and can be counteracted only by constantly changing kiln speed or adjusting fuel flow. Either of these adjustments, in turn, would further unbalance each zone. Such fluctuations or adjustments of kiln operation would give non-uniform exit and burning temperatures.

Lime from most kilns is discharged in the form of dust-free pellets; and a number of factors contribute to this product form. Among these factors are the moisture content of the feed to the kiln, uniformity of volume of feed per kiln revolution, the analysis of the feed, disintegrating action of the chains on the cake, and the rolling action of the sludge on the kiln wall.

Pellets can be formed in most kilns with or

SULPHUR

*Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region



*WELL PIPING

The well equipment consists of pipes of various sizes, placed one within the other and extending from the surface into the sulphur deposit. A 10" or an 8" casing extends to and rests on the top of the cap rock. A 6" pipe, inside the casing, passes below it and reaches into the barren anhydrite. It is perforated at two different levels, separated by an annular collar. The upper set of perforations permits the hot water to enter the sulphur formation and the lower set permits the entrance of the molten sulphur to the discharge pipe fitted inside the 6" pipe.

When a well is "steamed" the hot water passes down the annular space inside the 6" pipe and outside the sulphur pipe and flows through the upper set of perforations into the porous formation. The entire mass through which the hot water circulates is raised to a temperature above the melting point of sulphur. The liquid sulphur being heavier than water, makes its way downward to form a pool and displaces water around the foot of the well, and rises in the well column through the lower perforations into a 3" pipe which is the sulphur discharge pipe. Compressed air released at the bottom of still another pipe fitted inside the 3" pipe rises and mixes with the sulphur column, forming an air lift which raises the liquid sulphur free of water to the surface.

Loading operations at our
Newgulf, Texas mine



TEXAS GULF SULPHUR CO.
75 East 45th St. New York 17, N. Y. Inc.
Mines: Newgulf and Moss Bluff, Texas

without a chain system. However, in some cases, to form pellets and to prevent formation of a dusty non-pelleted product, kilns not equipped with chain systems must be fed with a sludge containing 55 to 60% moisture, increasing fuel consumption.

In chain system kilns, the lime sludge as discharged from the chain system should have a moisture content of from 10 to 15% for best operation. At this moisture content, the chain system is protected by the sludge against the disintegrating effect of the high-temperature oxidizing gases entering the system. The temperature of these gases is approximately 1200 to 1400°F.

This pelletized form of the lime sludge will be retained through the preheating and calcining zones unless it is caused to further agglomerate by the presence of excessive impurities, particularly soda in the sludge. Impurities can be controlled by proper liquor clarification, washing, and filtering. With respect to proper pellet formation and maintenance of this pellet form without additional agglomeration, coating, or ring build-up, experience indicates that for most operations, or average operation, the soda content as Na₂O should be maintained at approximately 1% of the dry weight of the sludge with the free lime content maintained constant at about 5/10%.

In event sludge leaving the chain system has a moisture content of less than approximately 10 to 15% and the sludge sample appears to be breaking up to a dusty form, removal of a portion of the chain should correct this condition. If the material sample appears to have constant moisture, considerably above the 10 to 15%, the addition of more chains would be indicated.

The condition of the feed is a major factor in controlling the formation of over-size pellets or large balls. In the formation of these over-size pellets or large balls, more heat is required for average calcination. The outside of these lumps may be over-burned with the center core underburned all resulting in a low availability in the kiln product.

A high soda content in the sludge is the greatest contributing factor to the formation of large balls and rings within the kiln. High soda content usually has a deleterious effect on kiln linings, particularly in the hot zone.

To correct persistent ring formation in any of the three zones, particularly in the chain system or to overcome a back-spilling effect which is usually caused by the inability of the lime sludge to feed into the chain system, it may be necessary to further change the feed to better control the impurities.

All other factors equal, small diameter kilns seem more prone to ring formation, particularly in the burning zone than do larger diameter kilns. The reason for this tendency can be the greater arch effect inside a small kiln, giving better retention of a ring formation in place against the lining. The smaller arch effect of the large diameter kilns will tend to cause agglomerating materials to fall away from the lining during kiln rotation, thus minimizing ring formation. A periodic coating in the burning zone of the kiln usually can be removed by shifting the fire zone or stopping the fire for a short period of time, or by barring.

Considering ring formation or build-up throughout the kiln, particularly in the chain system but also in the preheating section and the calcining section, sometimes a change in kiln speed or a change in the burning conditions can be employed to overcome these problems.

Combustion of the fuel is of utmost importance in uniform kiln operation. For controlled combustion for any given rate of feed with given moisture content, temperatures must be held uniform and the draft at the firing hood must be held constant. This control can be accomplished through the use of a few essential instruments, the most important of which is the draft controller.

To properly record, interpret, and control the kiln operation, there should be available to the kiln operator a record of the feed end gas temperature, the burning zone temperature, the rate of fuel flow, and the draft at the feed end of the kiln and at the firing hood. Additional thermocouples can be installed along the kiln

to obtain the gas temperature at any given point.

An instrument finding more and more use is the oxygen analyzer. It is used to determine the oxygen content of the kiln flue gases as an aid to evaluation of proper combustion conditions.

Mechanical Maintenance

The continuity of operation of a lime sludge kiln requires strict maintenance control. The rotary kiln is among the largest moving machines made and is subjected to extreme temperatures, power stoppages, atmospheric and weather conditions, varying loads, etc., which affect its wear and alignment. It should be observed following a procedure precisely as outlined by the manufacturer.

Even though great care has been taken in design and construction of the piers, in some cases, settling or tipping of the foundation can occur. If not corrected, it will lead to continual trouble with the kiln shell, the riding rings and the rollers. It is advisable, when making the original installation of the kiln, to establish bench marks away from the kiln foundation, checking the original alignment from these marks and rechecking periodically from these same bench marks to insure maintaining a constant alignment of the kiln; also resetting the mechanism bases from them should any tipping or settling of the foundation piers occur.

It might be assumed by some operators that once the kiln is initially aligned properly that the carrying mechanisms should not be touched to change any alignment of the kiln. This assumption certainly is not true. A kiln definitely must be adjusted periodically and checked at regular intervals if it is to be kept in perfect alignment.

The carrying mechanisms are equipped with screw lugs for roller and bearing adjustment. Rollers can be adjusted correctly through these screw lugs and the adjustment checked by inserting lead wires between the riding ring and rollers when they are rotating and measuring the thickness of the lead wire after it is pressed. In this manner, the rollers can be adjusted to obtain full bearing across the face.

The thrust rollers are designed to carry the full down-hill thrust of the kiln with the riding ring and roller faces lined up for full bearing across the width. However, carrying rollers should be cut slightly to cause the kiln to float away from the down-hill thrust roller for at least a portion of each revolution to avoid the possibility of an excessive down-hill thrust existing which might be detrimental to the thrust roller.

In aligning the kiln by adjusting or cutting the rollers, all rollers should be cut an equal amount rather than take all of the cut on one set of rollers. If one set of rollers only is cut to move the kiln in one direction, it is possible that another set of rollers could be cut to move the kiln in the opposite direction should the first correction be excessive. Such action continually would only lead to the various sets of rollers working against each other. If this

INDUSTRIAL PROTECTIVE COATINGS

By Raymond P. Hill

President, Chemical-Proof Construction Inc. and Pulp Bleaching Co., Seattle

(Highlights of his paper at the Sept. Convention)

Given any particular corrosive condition there are just two ways to minimize the corrosion damage, (1) construct with highly resistant materials or (2) use ordinary materials protected by a suitable protective coating. In a majority of cases use of a protective coating is more economic; and regardless of cost, the highly resistant metals are right now pretty hard to come by. Where existing construction is under attack, the use of protective coatings is about the only means to prolong its life.

Today there is no lack of protective materials to choose from. In addition to the natural resistant materials, such as rubber and asphalt, modern chemistry has produced hundreds of synthetic materials, generally classed as plastic resins, from each of which a number of coating products might be compounded.

action is carried to extremes, excessive misalignment could occur between any one set of rollers and the corresponding riding rings, thus resulting in unequal and aggravated wear between the riding ring and roller surfaces.

Stopping a kiln with hot charge, such as through a power failure, with no rotation of the kiln within a short while thereafter, can lead to a warped kiln or a distorted kiln shell. Sometimes, a warped kiln can be returned to somewhat its original alignment by properly reheating the kiln on the opposite side from the warp to draw it back in line.

Sometimes, the only way in which to correct a warped or bowed condition or misaligned shell is to cut out a portion of the shell, then reline the riding rings and carrying rollers, and finally weld the shell section back in.

Use a gasoline engine as an auxiliary drive to rotate the kiln at a slow rate of speed during power failure. For any type of kiln, either a two-support kiln or multiple-support kiln, the auxiliary drive is definitely good insurance. It can be provided at a small additional cost on the initial installation.

In the modern installation, the main or girth gear, usually a spur gear, is made in halves with full-machined teeth to permit reversing of the gear to obtain a double life. The main gear is bolted to a gear ring flange which, in turn, is welded to the kiln shell. The main driving pinion meshes with the main gear and is keyed to the low speed shaft of an enclosed gear reducer. The gear reducer is fixed to the foundation on the same slope as the kiln. The more recently installed reducers are provided with adjusting bolts and lugs on the reducer base plates to provide for adjustment or alignment of the drive. The driving motor is usually connected to the high speed shaft of the gear reducer by a multiple V-belt drive.

The main gear as well as all other bearing surfaces should be lubricated properly in accordance with the kiln manufacturer's recommendation. The main gear and main pinion should be maintained in proper mesh.

Present trend seems to be toward kilns having a greater slenderness ratio than formerly—that is, a greater ratio of length to diameter. With higher speeds of recent years, we have encountered a kiln-vibration problem.

Large slow moving equipment, such as the rotary kiln, has a low frequency of vibration, which, in many cases could and has coincided with a kiln speed in the operating range. This is reflected in an actual bouncing of the kiln on the supporting rollers. If such an effect were left to continue, it would result in damage to the foundation and the kiln parts.

The usual method of driving the main pinion has been to mount it directly on the reducer-extended low-speed shaft held in an outboard bearing.

By utilizing the proper flexible coupling, installing it between the reducer low-speed shaft and a jackshaft mounting the pinion, we can drop the critical speed below the operating range, nullifying the otherwise detrimental effects of vibration.

From the standpoint of the job to be done we divide the field into what we call, for convenience, technical coatings and maintenance coatings. By maintenance coating we mean a product that can be packaged ready for use, applied without special skill or equipment, and without any extensive preparation of the surface. Good maintenance coatings within our meaning will withstand quite severe atmospheric corrosion, including fumes and some splash from most of the common acids, alkalis and salts, but are not recommended for continuous submerged exposure. By technical coating we mean a product that is suitable for submerged exposure and other severe conditions.

Another convenient division is into thick and thin film coatings. Typical thick film materials are practically never applied in less

(Continued on Page 76)

FOURSOMES AT PORTLAND CONVENTION

About 100 men and women of the Superintendents National Convention took part in the day of golf at the championship Alderwood Golf Club course on the bank of the Columbia River, just northeast of Portland, Ore. The golf committee, headed by LeRoy Shanaman, manager for PennSalt in Portland, arranged a pleasant sunny day and the numerous prizes were among the best donated for the annual

event. One participant made a par 72 but when it was found he had failed to register, he had to surrender first prize.

A high official score of 78 was made by none other than the general convention chairman himself, Gus Ostenson, manager of paper manufacturing at Crown Zellerbach Corp., Camas, Wash.

Present at the convention but visiting the Camas mill instead of playing golf that

day was the only member of the association who ever won the golf championship three years in a row—Bunn Beasley, general superintendent and secretary of the Brown Paper Mills Co., West Monroe, La. This was back in the days when a permanent cup was offered, which became his for keeps. Mr. Beasley confided he has given up golf for fishing.



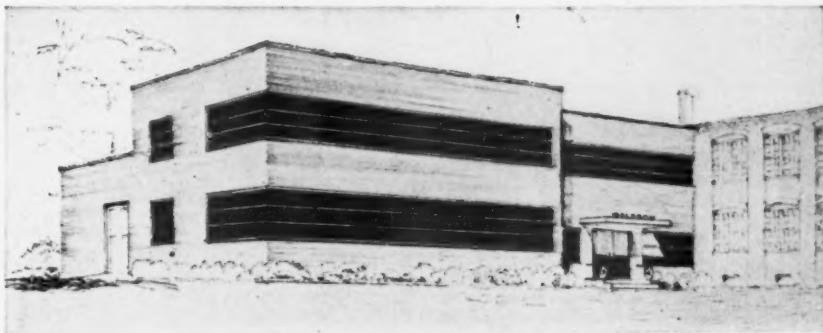
1—Hal Swanson, Nopco Chemical; J. R. Simpson, Champion Paper; Walt Morehouse, Nopco; Otto Hassel, Consolidated Water Power & Paper. 2—J. L. Ayres, DuPont; J. M. Walsh, Am. Cyanamid; J. B. Beck, Oregon P & P; Gene Kinnaman, Gates. 3—H. E. Chew, Manhattan Rubber; R. F. Engelhardt, United Board & Carton; L. J. Whims, Ohio Boxboard; H. E. Berg, Nalco. 4—Carl Fahstrom, Longview Fibre; Herb Wymore, Crown Z.; Harris Fenn, National Aniline; Roy Shanaman, Penn. Salt (golf chairman). 5—R. J. LeRoux, Weyerhaeuser; S. T. Dahl, Am. Cyanamid; Gus Ostenson, Crown Z.; Ray Smythe, Rice Barton; L. K. Smith, Pulp & Paper. 6—Roy Keller, Pacific Coast Supply; Walt Salmonson, Draper; C. H. "Snag" Dunn, Fibreboard; F. J. Gilmore, Puget Pulp. 7—J. P. Rubush, Impco; J. E. Garrison, Am. Cyanamid; W. O. Stevens, Ed Hunter, Bigelow-Liptak. 8—J. R. Lewis, Coos Bay Pulp; W. E. Damon, Orr; D. C. Fulton, Westinghouse; G. E. Morrell, Van Waters. 9—M. C. Kaphingst, George Miller, and J. W. Weiblein, all Columbia River Mills; G. B. Anderson, Puget Sound Sheet Metal.



10—H. B. Petersen, Hercules; L. M. Sutherland, Suth'd Refiner; Geo. Moorhead and G. R. Cranor, Oregon P & P. 11—Bob Holcomb, Fibreboard; Joe Connell, Nopco; Max Wilson, U. S. Rubber; Vern Basom, Fibreboard. 12—H. L. Bottemiller, Titanium; Joe Tudor, Westinghouse; Gene Wilson, Allis-Chalmers; Tom James, Flax. 13—Herb Beck, National Aniline; David DeZurik, DeZurik Shower; Jack Wilcox, Esco; Ed Lindquist, Geigy. 14—E. G. Drew, Drew Engineering; Ben Natwick; Appleton Wire; Hugh Osborn, Vanderbilt. 15—Tom Scarfone, Pacific Coast Supply; Hal Hansen, Gen. Chemical; L. A. Lundberg; C. H. Pedersen, Esco. 16—Stan Burkholder, U. S. Rubber; F. R. Loetterle, National Starch; Don H. Seixas and Ralph Westphal, American Can. 17—Jack Wyard, Gates; Ed Barthelemy, Crown Z.; Fred Crossman, Lindsay; Ralph Schaeffer, Penn. Salt. 18—Harold S. Hilton, Northwest Copper; E. J. McGraw and John Mueller, Acme; John T. Walmsey, Hooker Electrochem. 19—L. F. Koeppl, U. S. Rubber; R. H. Lawrence, Williams-Gray; A. C. McCorry, St. Regis; E. V. Young, Columbia Mills.

Soon

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Paper Industry



NEW WALDRON LABORATORY

Completely Equipped for Pilot Plant Operations

Another major contribution by WALDRON towards advancing the techniques in paper converting is the new Laboratory building and equipment being completed at New Brunswick, N.J. Coating and treating lines, including drying; a plastics extruding line; equipment for laminating, embossing, etc.—all will be available on a pilot plant scale. In addition to its fa-

cilities for research and development work, this remarkable laboratory will provide valuable technical service in pre-determining the exact requirements for commercial production.

Another of the progressive steps forward that maintain WALDRON'S 124 years of leadership in the paper and textile converting fields.

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NEWS IN BRIEF • • • AND BULLETINS

IMPORTANT CHANGES IN SOUTHERN KRAFT

H. D. Hinman has succeeded J. A. Lyden as mill manager of the Georgetown, S. C., mill of the Southern Kraft Division of International Paper Co., which is reputedly the largest pulp and paper mill in the world. He is the son of President John H. Hinman of I. P., who headquarters in New York. The younger Hinman, an engineer and experienced operator, has worked his way up the ranks in that big company and has had long experience in the Southern mills. Mr. Lyden has taken over as resident manager of the IP Natchez, Miss., mill which is making the first commercial dissolving pulp by Kraft process from hardwoods on the continent. Ike East, former manager at Natchez and before that at Springhill, has gone to the Mobile central headquarters of Southern Kraft to serve in an important capacity.

LOOKS OVER MILL SITES

Oscar Kretschmar, Tacoma, Wash., general manager of California Container Corp., a division of Container Corp. of America, recently visited the Roseburg, Ore., area investigating possibilities for site of a kraft mill. He was accompanied by Henry Thomas, Portland timber consultant, who had been retained to study raw material sources and supply. According to Mr. Kretschmar, the board of directors selected various western communities for a possible plant location and each is being examined.

BOWATERS' STUDIES SOUTH FOR MILL

The Bowaters' Paper Co. of London is studying possibilities for a new \$50 million newsprint mill in the South. The site may be either in Tennessee or Alabama. The officials of the Bowaters' admit that surveys are now being made.

ANOTHER NEW CALIFORNIA PLANT

Continental Can Co. is planning to erect a multi-million dollar plant in Pittsburg, Calif., to make fibre shipping drums, the growing demands necessitating the additional facility.

GOULD MILL SOLD TO BRAZIL GROUP

Sale of the Gould Paper Co. of Lyons Falls, N. Y., a subsidiary of the Continental Can Corporation, was reported for \$6,000,000. The purchasers, who propose to convert most of the capacity of the plant to printing papers, were a group headed by Cia. T. Janer of Rio de Janeiro and the International Basic Economy Corp., a financing company of New York, headed by Nelson A. Rockefeller. They were associated with Ralph E. Luebthi of Utica, N. Y.

PUBLISHERS BUY MINNESOTA MILL

Publishers of seven daily newspapers and a newsprint broker completed negotiations in New York June 28 buying the Hennepin Paper Co., at Little Falls, Minn., from St. Regis for approximately \$1,500,000 including inventory. The group includes: Forrest City Publishing Co. (Cleveland News and Plain Dealer); Express Publishing Co. (San Antonio Express and News); Charleston (W. Va.) Gazette; Newspaper Publishing Corp. (Tulsa World and Tribune); and Walter D. Peek, newsprint broker.

The mill has a rated maximum capacity of 15,000 tons annually and is now producing newsprint at the rate of 14,400 tons. The publishers, some of whom have been buying newsprint from this mill through Mr. Peek, will receive the entire output after Aug. 1. New top officer is Sterling Graham, general manager of the Cleveland Plain Dealer, president.

MALONEY IN HIGH GOVT. POST

John W. Maloney, vice president of Hoberg Paper Mills, Green Bay, Wisc., has been named director of the Pulp, Paper and Paperboard Division of NPA, succeeding G. J. Ticoulat who has been advanced to deputy assistant administrator of the Chemical, Rubber, and Forest Products Bureau. John E. Franzen, manager of sales research for Hammermill Paper Co., Erie, is deputy director of Pulp, Paper and Paperboard.

NCC PURCHASES JAITE

National Container Corp., one of the largest integrated manufacturers of corrugated paper products, has entered the paper bag business by acquiring for cash approximately 97% of the outstanding stock of The Jaite Co., one of the oldest manufacturers of multi-wall paper bags for all purposes and special purpose bags, it is announced by Samuel Kipnis, National's president. Jaite operates a kraft paper mill and bag plant in Jaite, Ohio.

CANADA INCREASES HIGH GRADES

Three Canadian companies making book, magazine and similar papers are increasing productive capacity of these grades by 43 percent. The companies, Howard Smith Paper Mills, Provincial Paper and E. B. Eddy Co., in 1950 had a production of 150,000 short tons, and the increase in capacity will be 65,000 tons to a total of 215,000 tons annually.

NEW SULFUR MINES IN ANDES

A new source of sulfur, on an Andean plateau 8,500 feet above sea level, is about to be developed for the international market as the result of negotiations revealed during the recent visit of Galo Plaza Lasso, New York-born President of Ecuador to the United States.



ROBYN A. CAMPBELL (left), newly appointed Sales Mgr. of Paper Division of Minnesota & Ontario Paper Co., Minneapolis. Began his career in Oxford mill in Rumford, Me., graduated from Syracuse, later with CCA, U.S. Gypsum and was Asst. Gen. Mgr. at Blawie Paper where he joined M & O. For past year was Asst. Sales Mgr.; succeeded in that position by Jas. V. Otness.

GEORGE H. PRINGLE (right), appointed Chief Engineer of The Mead Corp., and will direct General Engineering Dept. in Chillicothe, O. Succeeds J. B. Gough, who continues as Consultant. Mr. Pringle, born in Pictou, Nova Scotia in 1903, graduated from McGill with honors, went to Chillicothe as Div. Engineer in 1944, became Asst. Chief Engineer of all operations in 1947.

M & O Elections

Election of Ralph D. Main and Robert Faegre as vice presidents and Hadlai A. Hull as secretary-treasurer of the Minnesota and Ontario Paper Co. is announced by J. B. Faegre, president. The election was made by the Board of Directors, meeting at International Falls, Minnesota, where the firm's principal manufacturing operations are located.

St. Regis Will Have Bag Plant at Tacoma, Wash.

St. Regis Paper Co. has begun construction of a large steel and concrete bag plant alongside its two and half-year old paper mill at Tacoma, Wash., where Walter DeLong is vice president and manager. The bag plant was long planned to round out integration and use of pulp produced there and will employ 400.

Pulp Mill for Alberta

A pulp mill project for Alberta involving expenditure of approximately \$3,500,000 is provided for by an agreement recently signed by the provincial government and North Western Pulp & Power, Ltd., a new company which is understood to have no connection with R. O. Sweeny, Montreal promoter of the projected Edmonton Pulp & Paper Mills.

Representatives of the new company who signed the agreement were G. H. Allen, secretary; M. A. Egleston, vice president; Frank E. Ruben, Los Angeles and Toronto, is a provision director, and the company's headquarters are at 436 Lougheed Building, Calgary.

The proposed mill will be built just east of Edson, 123 miles west of Edmonton. Groundwood pulp will be manufactured.

Wage Boost

Some 2,000 employees of The Gardner Board and Carton Co., with plants in Middletown and Lockland, received a "cost-of-living" wage increase of 4% in May, announced E. T. Gardner, president and general manager. The increase will average five to eight cents an hour for hourly paid workers.

FIRST CHOICE IN PACIFIC COAST SAWMILLS...

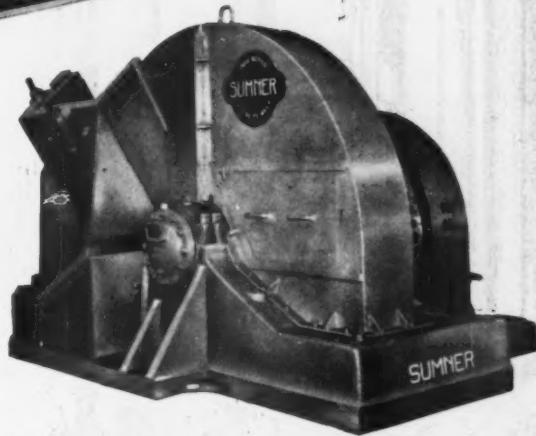
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The total units of chips produced daily, from sawmill waste, by SUMNER 66" and 72" Chippers runs into astronomical figures—figures that are highly significant from a conservation as well as an economic standpoint.

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BRITISH COLUMBIA MILL PROJECTS

Two major pulp and paper projects for British Columbia—one near Kitimat on the West Coast, a few miles south of Prince Rupert and the other in the Arrow Lakes district in the southeastern interior—are in the survey stage.

If it is decided to go ahead with both programs—and there is no doubt that they will materialize eventually—the estimated investment will top \$100,000,000. The three main factors favoring the two schemes are the same in each case—newly created hydro-electric power, abundance of pulpwood and continuing high-level demand for pulp and newsprint.

The companies principally concerned are Powell River Co., which has officially announced its participation with the Aluminum Co. of Canada in a survey of mill possibilities at Kitimat, and Celanese Corp. of America, which is planning increased capacity at its newly opened Watson Island high alpha pulp mill near Prince Rupert and is reported interested in Arrow Lake development.

In the Arrow Lakes connection, was made by Hon. E. T. Kenney, British Columbia's minister of lands and forests, when the new \$6,700,000 Whatshan power plant was opened there recently to supply 33,000 hp. to the Okanagan Valley and eventually 66,000 hp. Mr. Kenney said a \$75,000,000 integrated forest industry was planned for that region. "The project has been planned for three years, and it is coming quite soon," said Mr. Kenney.

As for Kitimat, this is regarded as a logical sequel to Aluminum Co. of Canada's decision to proceed with a huge waterpower program utilizing the Nechako Lake system and involving initial expenditure of \$160,000,000, aiming at production of 150,000 tons of aluminum annually. Ultimately, expenditure of half a billion dollars is proposed. There will be a surplus of cheap power and, in view of adjacent pulpwood, the setup seems ready-made for a pulp mill.

Announcement was made July 6 by Aluminum Co. of Canada, and confirmed by spokesmen for Powell River Co., that the two companies will survey possibilities of a pulp or newsprint mill at Kitimat, site of the aluminum ingot plant. The plan was said to be "in line with Aluminum Co.'s belief that Kitimat should not start its industrial career as a one-company aluminum town." Kitimat is today little more than an Indian village, but contracting firms are already building access roads.

The survey is being carried out "with the idea of creating a fully integrated industry to utilize all available wood species in the area."

Powell River representatives said it was impossible at this time to say when and if actual mill construction might be undertaken. This company has already spent considerably more than \$25,000,000 on postwar expansion and is one of the few to install new newsprint capacity.

Powell River is reported to hold more

than a billion and a quarter feet of timber in the Kitimat Valley as well as extensive timber on the Queen Charlotte Islands, which are closer to Kitimat than to the mill at Powell River.

Powell River Program In Full Swing

Powell River Co.'s current \$12,000,000 mill modernization program will be completed by the summer of 1952. This is a continuation of the 1945-48 developments carried out at the British Columbia paper town at a cost of some \$15,000,000, involving the new No. 8 paper machine.

Simultaneously, the Powell River Co.'s sawmill has been extensively remodelled and re-equipped at a cost of more than \$600,000.

A new wharf will have steel piling from England, steel frame building, and Colby crane.

Boiler house installations are by Babcock & Wilcox. The turbine is supplied by Brown Boveri of Switzerland, and boiler feed pumps by Bingham Pump Co., Portland, Ore. The boiler house will contain a separately fired B & W superheater for No. 7 boiler.

Dominion Engineering Co., Canadian Vickers and John Inglis Co. are supplying paper machine equipment, with vacuum pumps by Nash Engineering Co., Canadian General Electric and English Electric Co. Ross Engineering Corp. has supplied machine economizers.

Drives for machines are being supplied by General Electric for Machines 5 and 6 and by Bepco (Harland drive) for 3, 4 and 7. Headbox is being built by Burrard Drydock Co., Vancouver, and the beater to serve two machines by Heaps, Waterous Ltd.

A 42 in. Hansel ring hydraulic barker is being designed by Hansel Engineering Co., Vancouver, and will be built by Vancouver Iron Works. For new conveyors Link-Belt is supplying troughing idlers. Two 64 in. magazine-type Waterous Great Northern grinders are being installed, using 64 in. grinding stones from Norton Co., powered by a 4500 h.p. General Electric motor.

To serve the plant three new Gerlinger carriers four times the size of the straddle trucks presently in operation at Powell River are being purchased.

A. H. Lundberg of Seattle has done the engineering for the low-pressure relief recovery tower in the acid system, for which Stebbins supplied tiling and Foster-Wheeler the heat exchanger.

A. P. McLEAN, operations manager of Australian Paper Mills, has resigned to go into business for himself. He has been succeeded by J. D. ANDREWS, former production superintendent, who has been replaced by E. J. CRANE.

DR. D. L. SHERK, of the Columbia Cellulose Co. Ltd., Engineering Dept., at the new sulfite mill built by that Celanese subsidiary at Watson Island, B.C., is new name on the list of approved pulp testers issued by the Certified Pulp Testers Bureau of New York.



Canada—Australia—New Zealand Notes

E. P. TAYLOR, president of B.C. Forest Products and other Canadian industrial corporations, and M. W. McCUTCHEON, K.C., Montreal lawyer, have been added to the board of directors of St. Lawrence Corp., St. Lawrence Paper Mills Co., Lake St. John Power & Paper Co., and Brompton Pulp & Paper Co.

THOMAS DUNBAR, development consultant for Great Lakes Paper Co., has been authorized to carry out full-scale research on wood and pulp products, including chemical pre-treatment of lower grade pulp-producing species. The object is to develop a process to enable extensive use of jackpine, poplar and birch.

IAN M. MATHESON of Wellington, New Zealand, has been appointed deputy chairman of N.Z. Forest Products, Ltd.

HUGH R. HORNE, since 1947 engaged in special duties with the financial department of Powell River Co., Ltd. at head office, has opened an office in Vancouver, B.C., for the practice of chartered accountancy. Before entering the accounting profession he was with the stock department of James Richardson & Sons.

DR. W. E. COHEN has been elected president of the Australian Pulp and Paper Industry Technical Association following the fifth general conference at Burnie, Tasmania. J. D. ANDREWS is vice president. Past president is L. R. BENJAMIN, and committee members are: E. J. CRONE, A. R. M. JOHNSON, J. L. SOMERVILLE, G. W. ELLIS and H. B. SOMERSET, with J. L. BRETT, honorary treasurer, and R. W. SMITH, secretary. The new president is officer in charge of the wood chemistry section, Division of Forest Products, C.S.I.R.O. and a member of the FAO technical committee on wood chemistry.

P. R. SANDWELL, head of Sandwell & Co., consulting engineers to the pulp and paper industry, has returned to Vancouver, B.C., from a trip to Sweden.

THOMAS PAGE, for many years machine shop foreman at the Belgo division, Consolidated Paper Corp., Shawinigan Falls, Que., was recently honored after completing a half century of service with the company. W. D. MOSHER, mill manager, and J. F. LAWRENCE, general superintendent, made the presentation of a watch and cash gift.

H. M. WATSON, contracting engineer for Dominion Bridge Co., and well known in Canadian engineering circles, died recently in Montreal. KENNETH KINGTON, who joined Powell River Co. in 1937, latterly as log buyer, has been appointed manager of the company's log supply division, responsible for purchase of all logs. E. R. HAMILTON, of the engineering staff, Abitibi Power & Paper Co.'s Thunder Bay mill, has been appointed electrical engineer with the E. B. Eddy Co., Hull, Que.

RAY GARNETT, Whiting (Canadian) Corp., Toronto; KENNETH CRAWFORD, Union Screen Plate Co., Montreal, and F. S. MACDONALD and F. J. HOAR of Homad Services, Montreal, recently visited British Columbia mills.

EINAR WALLOE, general superintendent of the pulp division, Bloedel, Stewart & Welch at Port Alberni, has been on a tour of the Scandinavian countries.

JOHN FULLER, appointed sales manager for John Inglis Co. in Vancouver, B.C., succeeds Charles Chataway, who is now in business for himself. Mr. Fuller is from Eastern Canada.

GEORGE CHAHOOON, who was president of the old Laurentide Paper Co. before its amalgamation with Consolidated Paper Corp. in Montreal, died at his home in Grand Mere, Que., aged 78. He planned the first newsprint machine to be built in Canada.

ARTHUR J. ROCK, superintendent of the Thunder Bay sulfite mill of Abitibi Power & Paper Co., Port Arthur, Ont., died in hospital recently. He was a native of Appleton, Wis.

The **MORDEN**
Slush-Maker...
PULPER



- For PULPING
- For BREAKING
- For MIXING
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The *Slush-Maker* pulper quickly and efficiently gives the initial disintegration to all pulps, brokes, or waste papers. In addition, through a hand-wheel controlled bar to bar setting, difficult flakes and bundles are readily brushed out of the stock, color and other additives mixed and brushed in, furnishes blended and, if desired, given a preliminary beating treatment, either on a continuous or batch basis. The *Slush-Maker* completely defibers high wet strength papers, even in cold water, without damaging the fiber.

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Personal

Southern Notes

JAMES R. BEMIS, president of White Star Paper Co., which has been planning a paper mill at Prescott, Arkansas, chairmanned a recent mechanical efficiency session of the Southern Pine Association in New Orleans. He is also president of Ozark Lumber Co., associated with Dierks Lumber in the paper mill project. He showed movies of Swedish sawmilling and barking equipment.

LOUIS DANTZLER, formerly in the Moss Point, Miss., wood procurement office of International Paper Co., has been placed in charge of the recently acquired Batson tract near Poplarville, Miss.

DAVID CAMPBELL, forester in charge of woodlands of International Paper Co., at Camden, Ark., became proud father of twin girls last spring.

J. E. RHODES was named acting manager of the Champion Paper & Fibre Co.'s clay plant at Sandersville, Ga.

STEVE CHASE, JR., and **DICK BETTS** have been named production manager and general paper mill superintendent, respectively, at the Houston Division of Champion Paper & Fibre Co. A Dartmouth U. graduate, Mr. Chase joined the company's Hamilton (Ohio) Division in 1930 and moved South to Houston in 1940 as paper mill superintendent. Mr. Betts graduated in the pulp and paper course of Syracuse U. in 1936. He joined the Canton, N.C., Division and went from there to Hamilton and from there to Houston in 1949.

ROBERT DURRETT has been named production manager of the Mystic, Conn., plant of Sonoco Products Co. A native of Hartsville, S.C., Mr. Durrett joined the company in 1941.

HARVEY C. MAPPIN has been named sales manager for Gulf States Paper Corp., Tuscaloosa, Ala., having been promoted from field sales director. The promotion was almost coincident with presentation of a 30 years' company service pin.

RICHARD O'REAR has been named an assistant pulp mill superintendent at National Container Corp.'s plant at Jacksonville, Fla.

Mr. O'Rear started with Southern Kraft Corp. in Camden, Ark., in 1933, and joined National Container in 1938 as recovery boiler plant foreman.

SAMUEL KIPNIS, president of National Container Corp., believes we should give a free college education to those who can qualify for higher learning. This view was expressed at commencement exercises at the Jacksonville (Fla.) School of Technology.

RICHARD G. COKER, vice president in charge of engineering of Sonoco Products Co., Hartsville, S.C., received his 25 years' service pin from the company.

I. Y. EAST, who served as first manager for International Paper Co.'s new dissolving pulp mill (hardwood) at Natchez, Miss., has been called into the Southern Kraft Div. office at Mobile, Ala., in connection with plans to duplicate the unit. He has been succeeded at Natchez by Mr. J. A. Lyden, who was manager of the Georgetown, S.C., mill.

J. G. DALTON is now manager of Austell Box Board Co., Austell, Ga., succeeding G. Scott Francis who was called back to Charlotte, N.C.



IN SOUTHERN NEWS:

WILLIAM F. SCANLAN (left), who has been appointed to staff of Houston, Tex., district sales office of Swenson Evaporator Co. (extended to Texas, Louisiana, Southern Arkansas, West Mississippi), according to President G. E. Seavoy of Whiting Corp., parent company. Mr. Scanlan, Purdue '45, has worked in engineering and sales for Pulp & Paper and Chemical divisions of Swenson.

JOHN H. LAIRD, JR., (right), who left the post of Forester in charge of International Paper Co. lands in the Mobile (Ala.) district to become a pulpwood dealer in Greenville area. Mr. Laird is following in the footsteps of many other foresters who find, under today's procurement trends, an excellent field for application of professional skills.

FRED M. NELSON, of Houston, Texas, was named president of Texas-Gulf Sulphur Co., succeeding Walter H. Aldridge, who became chairman of the board after 32 years in the presidency.

EUGENE H. WALET, JR., president of Jefferson Lake Sulphur Co., Inc., announced production of sulfur began at the company's new Stark, La., dome. Annual production of 100,000 tons is expected.

WILLIAM M. LESTER, Georgia State Deputy Revenue Commissioner, doesn't think the imposition of the new state three percent sales tax on equipment and materials going into the erection of new paper mills will keep them out of the state. Adjoining states have escape clauses limiting the maximum sales tax applicable.

EARL PAINT CO., Utica, N.Y., has announced opening of a factory branch at 2502 Robinhood Road, Houston 5, Texas. W. B. ("Bud") Pickard, Jr., is manager.

AL LANDERS, who was associated with the late Gene Bechard, Atlanta, Ga., has been named Southern sales representative by Eastwood-Nealey Co.

THEODORE J. GROSS, of Union Bag and Paper Corporation, was elected chairman of the Citrus Container Institute at its recent annual meeting. Mr. Gross, with headquarters at the New York office, is technical advisor, corrugated container sales.

I. D. WELLS, mill manager of the Pasadena, Texas, mill of Champion Paper & Fibre, watched his 17-year-old son, Donald, who boxed his way to the finals for the lightweight championship in a Golden Gloves tournament at Galveston, Texas. It was Don's first year of boxing, too. **BILL BLALOCK**, of rewinder room, Champion Paper & Fibre, Canton, N.C., took 20 minutes to haul in a 10½-lb. big mouth bass in Lake Chatuge, which was his best catch of a long fishing career.



Savannah Promotions

Promotions in the Savannah plant of Union Bag & Paper Corp., include appointment of A. Lawson Sopp to the position of assistant comptroller. Mr. Sopp will continue to supervise the Savannah accounting department.

S. C. McCormick will act as a special assistant to Mr. Sopp, and John Marshall will be chief cost accountant. M. Cliff Crane is now in charge of all production, billing, and inventory records for the pulp and paper mill and bag factory, and J. A. Crosby replaces Mr. Crane as general accountant.

Box plant promotions included elevation of W. F. Youmans from mechanic to maintenance foreman.

P. Brooks Harrill, chief storekeeper, has been appointed construction purchasing agent and will assume the responsibility of purchasing for new construction projects. L. R. Potter will continue as mill storekeeper and Euel Akins was promoted for the construction period to assistant mill storekeeper.

A number of changes in the Pulp and Paper Division was announced by C. E. Hartford, manager of the division. H. F. McLeroy, chief design engineer, has been transferred for the duration of construction to project engineer in the Construction Division. Alex C. Ormond will serve as chief design engineer while Mr. McLeroy is assigned to the Construction Division.

W. G. Brasfield, assistant pulp mill superintendent, will spend his full time with the Construction Division as project engineer in charge of the semi-chemical plant and the expansion in the kraft pulp mill. R. C. Hall, shift foreman, has been promoted to assistant superintendent; J. F. King, assistant shift foreman, to shift foreman; and F. A. Hall, training operator, to assistant shift foreman.

H. Bullard Harris, paper processing department superintendent, has been promoted to first assistant mill maintenance engineer, and V. L. Wingate, master mechanic, has been promoted to position of assistant mill maintenance engineer. Charles W. Bannerman, assistant master mechanic, has been promoted to master mechanic. Dr. Hartford pointed out that Josh Ward continues as mill maintenance engineer but for the duration of the expansion program will function as project engineer in charge of the additions to the paper mill and power department. Jerome E. Pinckney, superintendent of the mill finishing and shipping department, will take over the duties of superintendent of the paper processing department too.

ROBERT AND COMPANY ASSOCIATES

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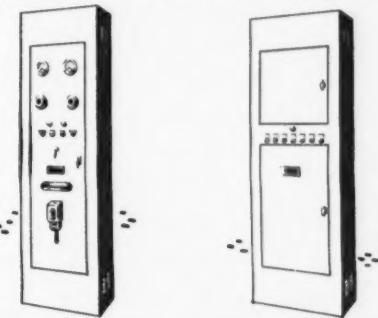
from Western Precipitation Corporation—pioneers of the commercial application of COTTRELLS, and now selling COTTRELL recovery equipment in all parts of the U.S.A. and foreign countries.

Various Methods of Energizing COTTRELLS Make Experience a Vital Factor

The many and varied factors affecting the operating efficiency of a COTTRELL. Precipitator make experience and "know how" of the greatest importance in designing and installing COTTRELL equipment. Western Precipitation Corporation—the organization that pioneered the commercial application of COTTRELLS—has had over 39 years of first-hand experience in developing and perfecting the

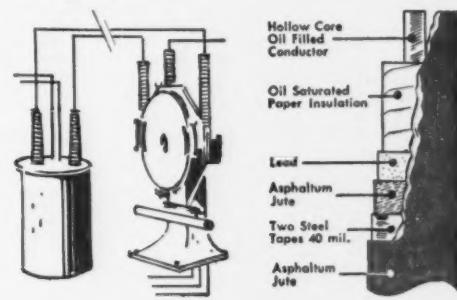
various elements that make up a complete COTTRELL installation, and these years of experience assure maximum performance from every Western Precipitation COTTRELL installation.

For example, the equipment for energizing Western Precipitation COTTRELLS include such features as the following . . .



RECTIFIER SWITCHBOARDS—are of the Enclosed Cubicle type with flush-mounted meters, push buttons, selector switches, and indicating lights. The cabinet door and rectifier control circuit are interlocked. Rectifiers and transformer contactors, instrument transformers, tap switches, terminal blocks and other auxiliaries are mounted inside the switchboard cabinet.

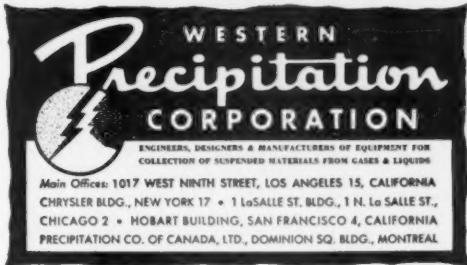
RAPPER AND POWER PANELS—are of the same external appearance as rectifier switchboards and can be installed beside rectifier switchboards to form a uniform and continuous switchboard installation. The cabinet is divided into two compartments—one containing AB breakers for control of all individual rectifier and signal circuits—the other containing all rapper controls and timers.



RECTIFIERS—for either full or half wave rectification. Mechanical rectifiers of the solid disc type are supplied with Radio Interference Correctors and Inductive Type Automatic Polarity devices. The Automatic polarity device has no commutator or brushes contacting high speed rotating parts. High voltage switch gear with interlocking control units is available.

HIGH VOLTAGE CONNECTIONS—between the rectifiers and the COTTRELL may be either special high voltage petroleum-filled lead and steel-covered cable with pothead terminal connections, or of rod-and-bus-bar construction.

Watch for the next in this series which outlines the various COTTRELL electrode systems available from Western Precipitation Corporation.



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Western Precipitation can design COTTRELLS to operate at any desired efficiency, for any capacity, to collect virtually any solid or liquid suspended in a gas, whether hot or cold.

Do you have these helpful COTTRELL booklets? This literature answers many questions concerning COTTRELL equipment. Free copies will gladly be sent those interested. Ask for booklets C101 and C103.



Pulp & Paper

Midwest Notes

JOSEPH FRYE was elected president of the Kimberly-Atlas Management club at a dinner meeting at Kimberly, Wis. He succeeds Theodore Lamers. Hal Wentzel was elected vice president to succeed Mr. Frye. William Dupont was named secretary to replace Jerry Sarrisan, and Robert Peerenboom, of the Atlas mill, was picked as treasurer to succeed Wentzel. Theodore Lamers and John Mullen were named on the board of directors.

ROSCOE KINCAID has been promoted to foreman in the carton plant printing department of The Gardner Board and Carton Co., Middletown, O. He will take a brief training course in Gardner's general office before assuming his new job. He joined the company in 1928 as a gluer, and was appointed a temporary foreman in July, 1950. He was born in Winchester, Ky. **MRS. ROY H. PURDY**, 65, wife of the vice president and secretary of Appleton Wire Works, Appleton, Wis., died suddenly while at a dinner dance. Her father, the late Albert Weissenborn, was a founder of the wire works. Her widower, Mr. Purdy, is also president of the Tuttle Press Co.

ROBERT W. WOLF of the staff at Thilmany Pulp & Paper Co. was married recently to Miss Joan Fay Kronforst of Kaukauna, Wis.

ARNOLD SMITH, long time employee with 28 years of service with Thilmany, retired recently. He was employed as a millwright in the machine shop.

ARTHUR J. UHLENBROCK, assistant traffic manager of The Gardner Board and Carton Co., Middletown, Ohio, has accepted a position as traffic manager of Dairypak, Inc., Cleveland, manufacturer of paper milk bottles. Dairypak is jointly owned by Gardner and Champion Paper and Fibre Co., Hamilton, Ohio.

NORMAN A. COAN, manager of the sales division control department of the Marathon Corp., of Menasha, Wis., has been awarded a Lybrand Award certificate of merit for his "outstanding contribution to the literature of industrial accounting during the 1950-51 year," it was announced in New York by the National Association of Cost Accountants. The National accounting award was made to Mr. Coan for his article entitled "Profit Paradoxes."

M. J. SCHULENBURG, public relations director of Kimberly-Clark Corp., was the featured speaker at a meeting held at the Paper Inn, Port Edwards, Wis., recently. His talk stressed the industrial editor's importance in a public relations program. His audience was the Wisconsin Industrial Editors' Association. Nekoosa-Edwards Paper Co. was host to the association two days.

JIM SIMPSON, RUFUS BARGER and JOHN SIBE each won some fancy door prizes at recent Supervisors Association meeting for Champion Paper & Fibre's mill at Hamilton, O.

Pacific Coast Notes

R. C. CRAIN has been named general superintendent of Columbia River Paper Mills, Vancouver, Wash., filling vacancy resulting with **E. N. WENNBERG'S** resignation to accept position as superintendent of paperboard products for Weyerhaeuser Timber Co. at Longview. Mr. Crain received his M.S. and Ph.D. degrees from the Institute of Paper Chemistry, Appleton, Wis., later being chemist for Gilbert Paper Co. and Whiting-Plover Paper Co. For the past 17 years he has been with Nekoosa-Edwards Paper Co. in various capacities, including research director, and most recently as superintendent at Nekoosa.

ARTHUR SEVERE, shift superintendent, Crown Zellerbach Corp., Port Angeles, Wash., died suddenly in June. He had worked hard in preparing a ranch and greenhouse in anticipation of retirement after many years at the newsprint mill.

CHARLEY JOHNSON, shift foreman in groundwood mill of Crown Zellerbach Corp., West Linn, Ore., died of heart ailment on June 30 after having suffered heart attack earlier that week.

D. D. RHEBECK has been appointed comptroller of Rayonier Incorporated. Mr. Rhebeck, who has been in charge of the Company's Timber Division accounting in Hoquiam, Wash., transferred to the executive offices in New York. He is a native of Seattle, and joined the company at Port Angeles in 1929. In 1939, he was transferred to Fernandina, Florida, Division, and in 1945, returned to the Pacific Northwest.

RAYBESTOS-MANHATTAN, INC. announces that P. H. Hagen of Seattle, Washington, has joined the West Coast sales division to handle the sale of Manhattan Mechanical Rubber Products and R-M packings in the Pacific Northwest with headquarters at 2221 Fourth Ave. South, Seattle. He will be attached to the West Coast sales division which has its principal office at 131 Mission Street, San Francisco, in charge of Littleton C. Barkley, Pacific Coast sales manager. Mr. Hagen has lived in Seattle for many years, is a graduate of the University of Washington and is well-known in the Pacific Northwest. Prior to joining Raybestos-Manhattan, Inc., Mr. Hagen was for six years the sales engineer with Charles Harden & Company, Seattle, one of the three Northwest jobbers for Manhattan Rubber Division's belting, hose, packing and specialties.

DR. EDWARD G. LOCKE, chief of the Forest Utilization Service in the Pacific Northwest Forest and Range Experiment Station, has transferred from Portland, Ore., to the U. S. Forest Products Laboratory at Madison, Wis. Dr. Locke will be chief of the division of derived products, which conducts research in wood chemistry at Madison.

ALBERT C. HENTSCHEL was elected a vice president in charge of paper sales of Johnson, Carvell & Murphy, Mfrs. reps., Los Angeles, at a meeting of the board of directors June 12. Mr. Hentschel, who is also a director, first became associated with J C & M in 1918; and with the paper products division in 1924.

CHARLES MINSKY, of Acme Paper Box Co., Los Angeles, was elected president of the Pacific Coast Paper Box Manufacturers Association at the annual meeting in Victoria, B.C.,

recently, succeeding **GEORGE G. MACKIE**, of Griggsby Bros., Portland, Ore.

P. T. DICKIE, assistant technical supervisor, Crown Zellerbach Corp., West Linn, Ore., and commander in U. S. Naval Reserves, was recalled to active duty, reporting to Salt Lake City. **BRUCE WRIGHT**, member of the technical department, has temporarily assumed duties of assistant technical supervisor.

RAYMOND W. JANZ, a major in chemical warfare service and technical assistant to coated paper superintendent, Crown Z., West Linn, Ore., recently completed two weeks duty at Edgewood Arsenal, Md. He combined this leave time with two weeks vacation to drive with his wife and three children to the east and back, visiting several pulp and paper mills enroute.

WALTER I. THIEME, plant industrial engineer, Port Angeles division of C-Z, has been called to military service.

A. NELSON HARTNAGEL, assistant manager, Fibreboard Products Inc., Port Angeles, Wash., ended a successful term as president of the Olympic Logging Congress, at its sixth annual convention in Victoria, B.C. He was succeeded by **ROBERT CUNNINGHAM**, logging superintendent for Rayonier, Inc., whose headquarters are at Hoquiam, Wash. **OLIVER LATVALA**, of Fibreboard Products Inc., Port Angeles, was elected secretary-treasurer.

ANTON BAUER, machinetender, and **LEWIS KESLER**, groundwood mill grinder, both at Crown Zellerbach, West Linn, Ore., retired the first of July.

JOHN A. GALEN, trainee at Camas division of Crown Zellerbach, has been named training supervisor of the organization's West Linn, Ore., division.

THOMAS J. BANNAN has been elected chairman of the board of regents of Seattle University, announced the Rev. Albert A. Lemieux, S.J., president of the university, largest Catholic university west of Chicago. Mr. Bannan is president of Western Gear Works and associated companies, president of Hallidie Machinery Co. and Webster-Brinkley Co., and a director of the Pacific National Bank of Seattle.

Rovang & Associates In New Well-Equipped Plant

Wallace G. Rovang, president of W. G. Rovang & Associates Inc., manufacturers of the nationally known Rovales, announces moving of their plant from 2435 North Lombard to 1945 North Columbia Boulevard, Portland, Ore. The new plant, with a floor space of 40,000 sq. ft., will give the company over ten times the floor space of the old plant, according to A. F. Laurie, supervising engineer and secretary.

The company is installing new equipment to expedite manufacture of Rovales.

One of the Men Behind Eastwood Wires Leonard Nourse "Boxing our YEARS"

Into this stout shipping box will go a fourdrinier wire, carefully swathed in protective wrapping. It's Leonard's job to see that every wire gets the most careful "boxing".

Weeks of effort and years of experience go into the making of each

wire; we see to it that this product of craftsmanship is packed with care to match.

More than "just a wire" is on its way to the paper mill when we pack for shipment; we are really "boxing our years" of experience for you.



EASTWOOD - NEALLEY CORPORATION • Belleville, N. J.

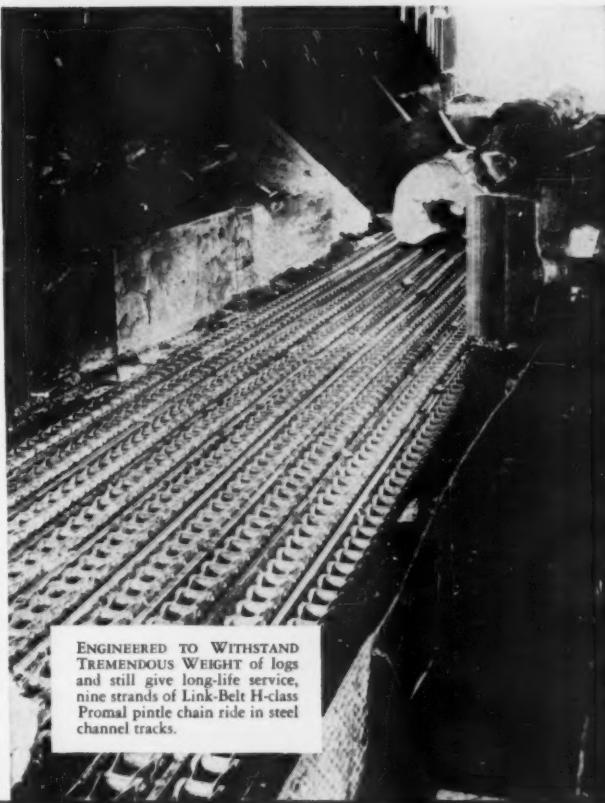
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Class H drag chain — for drag conveyors, handling sawdust or other refuse in runways or troughs.



Roof-top pintle chain — for transfer conveyors, each strand presenting a sturdy, moving ridge.

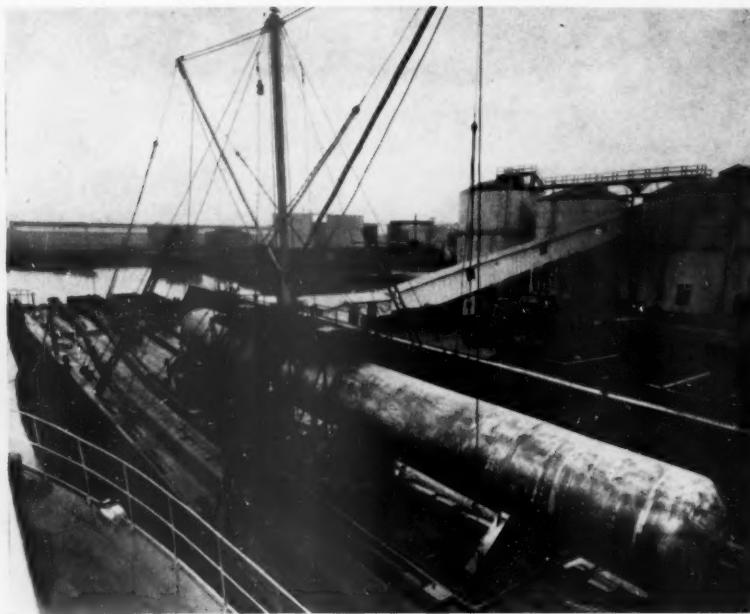
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CHLORINE SHIPPED BY BARGE

Water Transport of Other Chems



GRIFFITH STEAMSHIP CO.'s first "Chemical Barge," 277 ft. long, showing the 50- and 100-ton chlorine pressure tanks on deck, at dock of Hooker Electrochemical Co., in Tacoma, Wash. Coast Guard rules have been modified to permit barge transport of chemicals to new British Columbia pulp and paper mills. Caustic soda and other chemicals will be transported on the barge. Note rails to accommodate 12 tank railroad cars. Space in hold is also available for caustic soda.

Introducing its first "chemical barge" to the pulp industry, Griffiths Steamship Co. Ltd., Vancouver, B.C., Canadian affiliate of James Griffith & Co., Seattle, announces the inauguration of tug and barge service between Puget Sound and British Columbia ports of Harmac, B.C., and Watson Island, B.C., for carriage of bulk caustic soda, chlorine, and other commodities.

Griffiths Steamship Co. has entered into long term contracts with Columbia Cellulose Company Ltd. (Celanese Corp.) of Prince Rupert, B.C., and H. R. MacMillan Export Co. Ltd.-Pulp Division, of Harmac, B.C., for water transportation of chemicals to their new mills.

This marks the return of the Griffiths interests, formerly known as the Coastwise Steamship and Barge Company Ltd. and founded in 1912, to the British Columbia coasting trade. Both liquid caustic soda and liquid chlorine are being furnished by the Hooker Electrochemical Co. of Tacoma, Wash.

Griffiths recently purchased a LST hull "CT2" which has been converted to a combination car barge, bulk caustic soda and chlorine carrier. The barge now bears the name of "GRIFFCO" and is the third vessel to carry the name.

The new barge is 277 ft. long by 50 ft. beam with a loaded draft of 8 ft. It is equipped with six individual tanks capable of carrying 1500 short tons (50%

caustic soda solution) and special tanks equipped to carry 150 tons of liquid chlorine under pressure. The plans for conversion of the barge "GRIFFCO" were carried out by Carl J. Nordstrom, naval architect, Seattle, conversion work was by the Victoria Machinery Depot, Victoria, B.C.

Griffiths also purchased the former ATR type steam tug "LOGMAC" for use in this operation. The tug recently underwent conversion from steam to diesel. Its new name is "MOGUL." It is 157 ft. long and has a beam of 33 ft. and a 16 ft. draft.

Plans call for bi-monthly service to Harmac, and Prince Rupert, with the MacMillan Kraft pulp plant taking their chemical requirements of bulk caustic soda in the under deck cargo tanks and the chlorine in 55-ton railroad cars (barge capacity for 12 cars). Columbia Cellulose dissolving pulp mill at Watson Island, will require bulk liquid caustic soda in the under deck cargo tanks and the chlorine in specially designed 100 and 50 ton long sausage-like pressure tanks. This will be the first time on the Pacific Coast that bulk chlorine has been transported in fixed tanks on barges. Griffiths and Hooker Electro-chemical initiated changes in the U.S. Coast Guard rules and regulations to permit shipment of caustic soda and chlorine on the same barge or vessel. A new method of discharging has also

been developed for the bulk chlorine at Prince Rupert, where there is a 21 ft. tidal range. The specially designed pressure tanks were built by Vancouver Iron Works, Vancouver, B.C., and tested at 500 lbs. and 300 lbs. respectively working pressure to conform to ASME code and U.S. Coast Guard regulations Sub-chapter N.

The Griffiths company also has available for this service the sister barge "GRIFFSON."

Expansion Program At Los Angeles Mill

Angelus Paperbox Co., on So. Eastern Ave., Los Angeles 22, is now well along with an improvement and expansion program which upgrading its paperboard quality and increasing production on its 108-in. Black-Clawson cylinder machine from 85 to 110 tons a day.

A. E. Stein is president, W. Beatty, mill manager and purchasing agent, and C. E. Shawhan, mill superintendent. Robert W. Stevens, now engineer and mill consultant, of 5127 Whittier Blvd., Los Angeles 22, and former Angelus manager, advised the company on its program. He told *PULP & PAPER*:

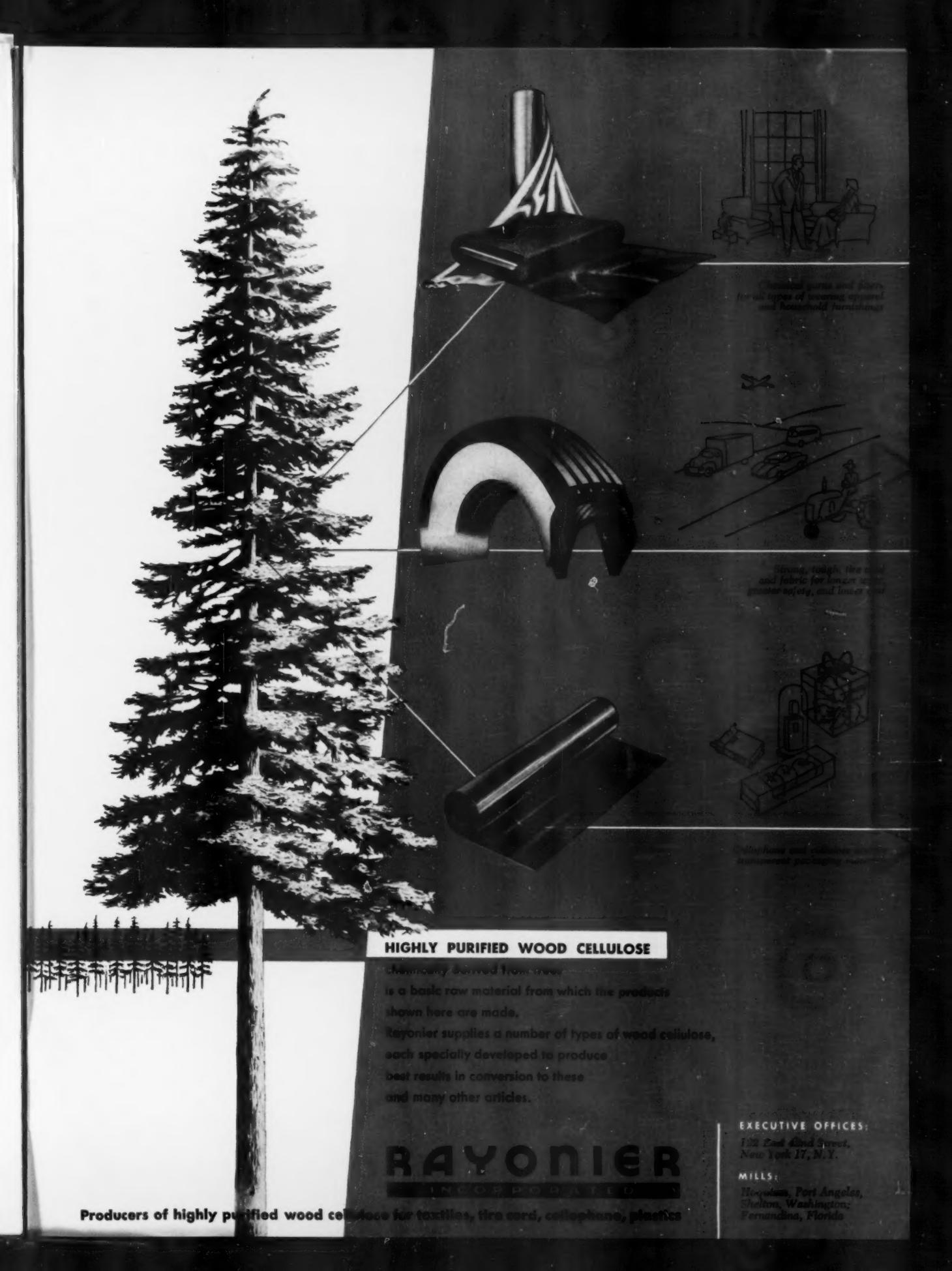
"We are just completing the electrical wiring for power and lights and the steam piping for process steam and heating in a new modern brick building addition which is 550 feet long and 100 feet wide, and have moved the corrugated box department, now at a branch factory at 61st St. and Avalon Blvd., into this new building which is directly adjacent to the paperboard mill building and the building housing the folding box department. The corrugator has been completely revamped and enlarged. This will give the corrugated box department ample room and increased production.

"Plans call for erection in the future of still another building at the So. Eastern Avenue address which will house the set-up box division thus concentrating all operations at the one address."

As to the paperboard mill, Mr. Stevens said: "An additional Shartle Miami No. 1 Jordan is due for delivery and a new Union Iron Works 500 hp. boiler is due for installation by early March. We have ordered a Black-Clawson suction primary press, a new Nash Vacuum pump with 60 hp. drive, a General Electric auxiliary motor drive, 15 additional dryers, which together with eight of the existing two-deck dryers will make an additional stack of 23 dryers and another Black-Clawson spiral bevel gear drive with Fawick air clutch.

"Also, we have ordered another Shartle-Dills 10 foot batch-type hydropulper, complete with 75 hp. wound rotor motor drive, two Shartle D.S. stock pumps, and one Shartle 14-4 Agitof pump. This equipment, together with the Jordan will afford approximately 30% increase in stock preparation equipment and will make possible the use of four different grades of stock at one time and the manufacture of a so-called 4-way sheet of board instead of only a 3-way sheet as at present."

Mr. Stevens thought this program will be completed within 6 to 8 months.



HIGHLY PURIFIED WOOD CELLULOSE

...is a basic raw material from which the products

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News and Notes from

EQUIPMENT AND SUPPLY COMPANIES

Beloit Iron Works has a new series of outstanding institutional advertisements in *Fortune* and trade magazines which is doing a real job for the paper industry. Harry Moore, vice president of Beloit, modestly admits Beloit can't do all the job itself but does feel that it is high time the paper industry blows its own horn. The ad in the June issue of *Fortune* was headed "Imagine America Without Paper" and shows a housewife trying to carry home an armload of completely unwrapped groceries, and what a time she is having!

SUTHERLAND HIGH YIELD SULPHATE SYSTEM is the title of a folder recently issued by the Sutherland Refiner Corp., Trenton 6, N. J. Also a folder describing a new method of Pressure Washing has been issued by Sutherland, Inc.

DAVID P. WILLIAMS, a representative in the Pittsburgh sales district of Heppenstall Co., has been awarded its President's Trophy as "salesman of the year." The presentation was made by R. B. Heppenstall, president of the steel forgings concern, at a sales meeting in Westchester Country Club, Rye, N. Y.

THE BABCOCK & WILCOX COMPANY, nation's largest producer of steam generators and related equipment, has taken five entire floors totalling approximately 120,000 square feet of space in the new fully air-conditioned 32-story Chrysler Building East, New York. The Babcock & Wilcox Company has five manufacturing plants and a research center in Ohio, Western Pennsylvania and Georgia and employs approximately 14,000 people of which about 725 are in the New York office.

OAKITE PRODUCTS, INC., has issued a booklet entitled "Modern Oakite Cleaning Methods for Pulp and Paper Mills" which is especially prepared for this industry. One of the chapters, for instance, is on cleaning of wires on paper machines. Copies may be obtained by writing to the Oakite company at 22 Thames St., New York City 6.

OLIVER UNITED FILTERS, INC., of New York, Chicago and Oakland, Calif., has issued a new bulletin (No. 309-R) describing the Oliver Diaphragm Slurry Pump known as the ODS Pump. Bulletins and other information on the ODS Pump may be obtained by writing or calling the nearest Oliver United office.

R. M. WADE & CO., Portland, Ore., announces recent perfection of new quick-locking coupler equipment which speeds and simplifies the setting up, moving and maintaining of portable construction and industrial pipe lines. "Quick-Lok" is the trade name of the new line of Wade couplers. Tests have proved that one man can lay as much as 1000 feet of pipe per hour as a result of the instant hook-up with-



JAMES MAIR (left), Vice President of Goslin-Birmingham Mfg. Co., Inc., Birmingham, Ala., was awarded the professional degree of Chemical Engineer by the University of Alabama at its commencement recently in recognition of his outstanding contributions in the field of evaporator design. His thesis "The Falling Film Evaporator" is on file at the U. of Ala. library. Evaporators designed by Mr. Mair are in operation in Cuba, Mexico, Hawaii, Puerto Rico, South America, and 15 states in this country.

HARRY ARMSTRONG, SR. (right), has been appointed Assistant Secretary of the Cameron Machine Company, Brooklyn, N.Y. Mr. Armstrong has been associated with Cameron for twenty-two years. He joined the company as a member of the Engineering staff, and in 1940 was made chief draftsman. In June of last year he was named manager of the Service Department, and will continue in that capacity in addition to his new appointment.

out tools, and other advanced features of the new coupler. Since 1935 Multnomah Iron Works, manufacturing division of Wade, has produced a complete line of quick-locking couplings for portable irrigation equipment and the industrial "Quick-Lok" coupler contains many of the features of the irrigation coupler, but is designed especially for industrial use. The new "Quick-Lok" equipment has been thoroughly field-tested at work on a large variety of operations. It promises important savings in time and manpower to industries.

RESINOUS PRODUCTS DIVISION OF ROHM & HAAS CO. announces development of a cationic wet-strength resin of unusual properties. Designated as Uformite 700, the new nitrogenous resin offers excellent curing characteristics in a variety of pulps and over an extremely broad range of resin concentrations in the pulp. Whether at high or low levels of concentration, it is said to produce wet tensile strength economically, with rapid development of strength after the paper leaves the paper machine. Heretofore high early wet strength has been possible only with resins requiring acid treatment and aging in special acid-resistant equipment. A major advantage claimed for the new resin is that it requires no special mixing procedures or equipment. Uformite 700 dilutes readily with water and is then ready for use. The new resin appears to perform well on all types of pulp—bleached and unbleached, kraft and sulfate—with no sensitivity to the sulfate ion concentration in water.

ESCO'S PROCESS EQUIPMENT DIVI-

SION has produced a new catalog of interest to practically all industries whose operations involve equipment subject to corrosion, heat or abrasion. ESCO Stainless and High Alloy Products for the Process Industries, No. 175, is an enlarged, more comprehensive version of ESCO's original process equipment catalog. It is 68 pages of vital facts, attractively done in red and black. Copies may be obtained from Electric Steel Foundry Co., 2141 N. W. 25th Ave., Portland 10, Ore.

ROSS INDUSTRIES CORP., Highland Park, N. J., announces that it has been merged with its wholly owned subsidiary, J. O. Ross Engineering Corp. Both businesses will henceforth operate under the name of J. O. Ross Engineering Corp., with main offices at 444 Madison Ave., New York.

WARREN STEAM PUMP CO., INC., Warren, Mass., manufacturers of Warren and Warren-Quimby pumping machinery announce that they are now represented in up-state New York through their Pittsburgh representatives, Process Industries Engineers, Inc., Pittsburgh, Pa., who have opened an office in 703 Temple Bldg., Rochester 4, N. Y. Mr. J. L. Woll is in charge.

GENERAL AMERICAN TRANSPORTATION announces that Ben King Duffy, sales engineer, has been appointed district sales manager of the Plate & Welding Division for the Pittsburgh district. His district embraces the Western half of Pennsylvania, Eastern half of Kentucky and the states of Ohio, West Virginia and Tennessee.

GRENVILLE R. HOLDEN, president of F. C. HUYCK & SONS, Rensselaer, N.Y., announced with regret the company's acceptance of the resignation of Dr. Edwin A. Rees as director of felt sales and a member of the board. Although Dr. Rees wanted to be relieved of executive responsibilities, his associates are pleased that he has agreed to continue as consultant on papermakers' felt problems. Dr. Rees graduated from the University of Denver, Colo., in 1913, and received his degree

Pittsburgh Glass Buys Cyanamid Share

Pittsburgh Plate Glass Co. has purchased the 49% interest in Southern Alkali Corp. previously owned by American Cyanamid, C. K. Ballard, Lake Charles, La., plant superintendent, announced.

The corporation, with chlorine and alkali producing plants at Lake Charles and Corpus Christi, has been operated by Pittsburgh Plate Glass since Southern Alkali was formed in 1931.

Monsanto President

One of the nation's leading atomic scientists, Dr. Charles Allen Thomas, has been elected president of Monsanto Chemical Co. The 51-year-old scientist replaced William M. Rand, who retires under pension. Dr. Thomas has been executive vice president since 1947.

Bingham

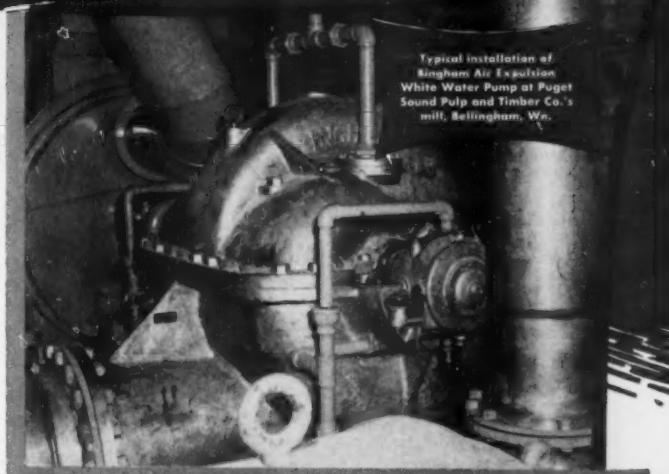
PRECISION BUILT FIELD PROVEN PUMPS

Air Expulsion
PROCESS PUMPS
WILL NOT BECOME
Airbound

Bingham Air Expulsion Pumps handle pumpage with entrained air at an even, non-pulsating flow. These pumps are being used effectively in the Pulp and Paper industry for handling air entrained white water and mill liquors.

• • •

It takes Big Precision
Tools like these to
Build Pumps like this
 Bingham Process Pumps, like all Bingham products, are precision built in our new and modern plant. All rotating parts are dynamically balanced. All parts requiring close tolerances are ground on heavy duty precision grinders. Each part is subjected to rigid inspection by craftsmen who for years have been trained to follow the high manufacturing standards of Bingham Pump Company.



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Link-Belt Manager



H. G. Andersen
Link-Belt Co. announces that Harry G. Andersen (in picture) heretofore district sales engineer at Milwaukee, Wis., has been appointed district manager at Birmingham, Ala., with headquarters in the Comer Building. Mr. Andersen was educated at Northwestern University, Illinois Institute of Technology, and Wisconsin University. He started his Link-Belt career in 1937.

R. A. McDONALD, Vice President, Crown Zellerbach Corp., presents 40-year service pin to ALTON LEWIS (right), Log Foreman, and 5-year pin to his son BYRON D. LEWIS (center), of Technical Department.

THE KOERNER BROTHERS, shown in this picture with Abitibi officials, are from Czechoslovakia. They went west to British Columbia to found one of the North Amer-West's big timber operations. Now they have become leading figures in the North American pulp industry as a result of merging interests with Abitibi in the new Alaska Pine & Cellulose Ltd., successor company to British Columbia Pulp & Paper Co. Shown below (l. to r.): WALTER KOERNER, Vice Pres. of Alaska Pine Lumber Co.; J. S. T. TOREY, Counsel for Abitibi; D. W. AMBRIDGE, President of Abitibi and Chairman of Board of its new far western subsidiary, and LEON J. KOERNER, President of Alaska Pine and also new President of A.P.&C. Alaska Pine's timber operations will merge with B.C. Pulp's to supply the Port Alice and Woodfibre mills. This was the biggest transaction of its type in Western Canadian history.



HERE ARE SAFETY AWARDS and representatives of winners in U.S. and Canada. In picture at left: M. J. FOLEY (left), Exec. V. P. of Powell River Co. is presenting gold trophy of Western Branch, Canadian Pulp & Paper Assn., to ED TUCKER (right), Safety Director, Port Alice mill, B.C. Pulp & Paper Co., for British Columbia mill with best 1950 safety record. In picture on right: GLEN HAWKINS (left) Supt., Vernonia, Ore., logging operations, Crown Zellerbach, receives Oregon Governor's plaque from PAUL GURSKE (right), Oregon Industrial Accident Commission chairman, for two years, operation without lost-time accident.



MEMBERS OF LINK-BELT CO.'S Executive Committee and Pacific Coast representatives conferred recently at new plant in Seattle, 3405 6th Ave., S. Those attending: I. to r., top row: J. F. STROTT, Link-Belt's Northwest District Mgr., Seattle; RALPH M. HOFFMAN, San Francisco, Link-Belt V.P. in charge of Pacific Division; HARRIS WHITEMORE, JR., Chairman of Lewis Engineering Co. and Link-Belt Board member; Bottom row: RUSSELL B. LIVERMORE, New York attorney, Board member; GEORGE P. TORRENCE, Link-Belt President; and HOWARD CONLEY, past President of NAM and member of Link-Belt Board.



DONALD T. KELLER (left), Asst. Gen. Supt. of Pulp and Paper Division of Potlatch Forests, Inc., Lewiston, Idaho, for power and recovery, also is from South, and KENNETH ROSS (right), Kansas-born Potlatch veteran is Power Supt. for both Lumber and Pulp and Paper Divisions.



AL LAYTON (left), Vice Pres., Crown Zellerbach Corp., San Francisco, is shown congratulating WILLIAM BUSE, core-cutter in Paper Machine Dept., C-Z, Port Townsend, Wash., awarded 40 Yr. Service Pin. At dinner, Mr. Layton presented 25 yr. pins to James Campbell, Machine Shop Supervisor; V. C. Linn, Electrician; Edward Moar, Machinist, and Robert Nott, Pulp Mill Shift Foreman. Mr. Layton said "the problem for further major expansion at Townsend is water" and possible reduction of wood supply from Canada.

GANG BUSTER

for Pulp and Paper Mills

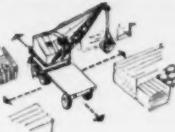
Savings Pile Up with LORAIN at Your Mill!



NEW YORK & PENNSYLVANIA CO.
This Lorain-TL Self-Propelled Crane at the Lock Haven, (Pa.) plant of New York & Pennsylvania Co., is a typical installation. The "TL" is equipped with grapple to transfer wood from piles to chipper cars; it moves readily from one end of their extensive yard to the other.

MOBILITY UNLIMITED . . .

A Lorain Rubber-Tire Crane can travel anywhere in your mill yard. Self-Propelled models have 4 speeds up to approximately 7 miles per hour.



DO ALL JOBS . . .

Equip your Lorain Crane with a sling, grab or grapple whichever is most suitable for your loading or unloading . . . also use it as a shovel or dragline to build roads, ponds, etc.



SAVES YARD SPACE . . .

Lorain Cranes pile up pulp in bigger piles . . . can reach out farther to pile or pick up pulpwood, saves valuable yard area.



Here's a quick answer to manpower shortage! It's a Lorain Self-Propelled Crane for pulpwood handling. These one-man operated cranes do the work of a gang of men . . . keep up with mill demands at reduced costs.

In addition to saving manpower, Lorain Cranes add many more advantages to pulpwood handling. They may be used with slings, pulpwood grabs or grapples to suit any size of wood and method of piling. Lorains can work around the clock — with the same efficiency that

never varies with the hour, season or weather.

Lorains protect manpower by reducing accidents—eliminate the hazard of dynamiting frozen wood and replace as many as twenty or thirty men on a slippery block pile.

Find out how a Lorain can solve your manpower problems today and step up pulpwood cordage every hour. Your Thew Lorain distributor has the answer!

THE THEW SHOVEL COMPANY LORAIN, OHIO

THEW LORAIN®

CRANES
for
PULPWOOD
HANDLING

NATIONAL CONVENTION PAPERS

(Continued from Page 59)

than 1/16 inch thickness and may be as thick as 1/2 inch or more. Typical thin film materials are almost never applied in more than .025 inch thickness and are often no more than .005 inch. Thick films are generally selected where insurance is necessary against the probability of some mechanical imperfection in a thin film, where severe abrasion requires allowance for mechanical wear, or simply because desired chemical characteristics are most readily obtained. Thin film coatings are generally selected for lower cost.

Another grouping is into hard and soft coatings. The soft coatings generally have a certain degree of rubber-like elasticity, since for most purposes a soft material does not make a good protective coating unless it is also resilient. The hard coatings typically have a smooth, glass-like surface, and are often selected for this characteristic, which makes them non-adherent and easy to clean. This is particularly desirable in the paper mill where slime is a problem.

By chemical classification nearly all the coatings that have had extensive industrial use fall into three groups: The rubbers, natural and synthetic; the phenolics, and the vinyls. A wide variety of coating products can be made from each of the basic materials by modification and blending. In taking a closer look at individual coatings, I shall carefully avoid prescribing their use, for the same reasons that no reputable physician would prescribe treatment off the cuff for an unknown patient.

Historically, the daddy of all technical coatings is natural rubber. It has had many years of successful application in our industry for a wide range of exposures. It can be compounded from very soft to ebony-hard without greatly changing its chemical resistance. It must be used as a thick membrane, preferably not less than 3/16 inch. The soft compounds have good abrasion resistance. Its safe temperature ceiling under severe chemical exposure is around 175°F. It is applied extensively only in solid sheet form and must be vulcanized in place.

Chlorinated rubber, a derivative of natural rubber, has been found useful as a maintenance paint.

The substitute rubbers produced during the war were much inferior to natural gum for technical coatings, but some of the special-purpose synthetic rubbers have properties that are superior for many conditions. The oldest and most versatile is neoprene. Neoprene is the trade name of a family of polymers of chloroprene. Neoprene coatings are available for application in liquid form and in a paste form resembling putty, as well as in solid sheet form, and all of these may be combined in the same application. This is valuable where intricate shapes are involved. The neoprenes have slightly lower tensile strength than natural rubber but are greatly superior in resistance to many chemicals and particularly to oils, solvents, gas diffusion, atmospheric oxygen, sunlight and heat. The temperatures under many exposures may be as high as 250°F. Applications are practical in film thicknesses all the way from a few thousandths to 1/2 inch or more, according to conditions. Abrasion resistance is better than natural rubber, especially at higher temperatures. Most neoprene technical coatings are cured by heat after application, and very high adhesion can be obtained.

One general maintenance coating compounded from neoprene is the most effective product of this class we have yet tested. This is an air-curing coating that may be put on like paint, by brush, spray or roller. It dries in a few hours to a tough elastic film having all the characteristic properties of neoprene. As much as .008 to .010 inch may be put on per coat, so that a single application is often all that is required.

The phenolics are hard coatings of the thermosetting type. Once cured they are permanently hard and will not soften with heat. Most of them have a high degree of smoothness and gloss. They are used only as thin films. They have good resistance to dilute acids and salts

and outstanding resistance to most solvents. The usual formaldehyde-phenolic types are not resistant to alkalis. There are notable differences between phenolic formulations, and in probably no other class of coatings is the skill and experience of the compounder such an important factor. Many of the commercial coatings are quite brittle, but there are improved types in which this has been overcome. One special phenolic has achieved high resistance to alkalis, while retaining all the normal good qualities of its type. A sample of this material has been boiled in 15% caustic for a year and a half without degradation. A furfural-phenolic coating is available that has exceptional resistance to chlorine and strong hydrochloric acid. Temperatures with the regular phenolics can be up to boiling in submerged exposure and up to 450°F. in dry heat.

The vinyl group of coatings are compounded from thermoplastic resins that have excellent chemical resistance and stability but a rather low softening point. Recommended temperature ceilings vary from 150°F. to 185°F. according to the formulation used. Within this temperature limitation the vinyl coatings are resistant to a wider range of corrosives than any other plastic material. Both thin film and thick film applications are satisfactory. Thin films are applied in liquid form. The most highly resistant compounds have rather poor adhesion to metal and other surfaces, so a multiple-coat system is generally used, with highly adhesive primers followed by highly resistant top coats, built up to

the thickness desired. Thick film linings are made with sheets of solid material which are cemented to the surface with suitable adhesives and then welded by heat at the joint. Both the sheet and liquid films are tough and rubbery, and have very good resistance to wear and abrasion. Fairly satisfactory one-package maintenance coatings are obtained by a compromise blend of the more resistant and more adhesive materials.

At this point it may be a good idea to remind ourselves of a fundamental principle that we know but don't always think of. It is elementary not to work a material beyond its temperature ceiling, but that is only part of the problem. For every 18 degrees Fahrenheit of temperature increase the speed of attack is doubled. Suppose an installation is specified for 100°F. Someone leaves the wrong valve open, or you change operating conditions without thinking of the coating and the exposure gets to be 190°. The 90 degrees increase is five times our 18-degree 2-to-1 step. The increased attack is therefore at the 5th power of 2, or 32 times the original specification.

The next thing is to get the material put on properly. That requires proper equipment and facilities for each type of material, but the critical requirements are know-how and skill, both of which come only from experience. Among many important elements our experience leads me to emphasize most careful preparation of the surface as a prime essential for all technical coatings. Have your coating done, if possible, in a plant organized for that purpose. However, it is possible today to apply all the standard materials in the field successfully, with practically no limit as to size or form of the work.

PROBLEMS MET IN OPERATION OF HIGH SPEED KRAFT MACHINES

By John A. McDermott

Paper Mill Supt., St. Regis Paper Co., Tacoma, Wash.

(This paper was presented at the national convention by John M. Victor, Assistant Paper Mill Supt., St. Regis, Tacoma, due to Mr. McDermott's absence in Jacksonville, Fla., where St. Regis is building a new mill.)

We do, of course, have plenty of problems and they certainly are becoming more critical as we approach speeds around 1600 fpm. The high speed kraft machine of today is usually built and designed for speeds ranging from 500 to 2000 fpm. This has mostly come about by progress in design of head boxes, suction rolls, simplification of press arrangement, and the entire machine has been balanced to operate at high speeds. In the past couple of years some pick-up arrangements for transferring the sheet from the wire to the 1st press felt have been in use. General acceptance of this pick-up has been retarded by certain physical faults that appear near solution. From a comparison of the 1000 fpm. speed of 8 or 10 years ago with the maximum speeds we know today, it is apparent that in the next 5 to 8 years the speed of machines will increase perhaps 200 to 300 fpm.

Most of my experience with high speeds has been on specification kraft for multiwall bags. Our first problem is to meet specifications, and in doing so there are times the formation on the wire is such that it creates more of a sticking condition at the couch roll than at other times. We have found that a free kraft sheet that is high in machine direction tensile will take off at the couch with less sticking. We also have to prepare stock to meet specifications in the finished sheet rather than for machine operation.

One of our big problems when we approach speeds over 1400 fpm. has been delivery on the wire from the slice. There has been a lot of development along this line, both in open and pressure type headboxes. We have been operating with a totally enclosed pressure type headbox at Tacoma for 2½ years, and have reached speeds up to 1600 fpm. The case of the

pressure type headbox, I believe, will be improved by the use of deaerating equipment, which in one form, at least, is now operating in the industry. The open type headbox lends itself to most conditions, but I am afraid it is rapidly becoming a thing of the past, especially on high speed machines.

I may be sticking my neck out on this next statement with some groundwood men. We feel our problem of attaining speeds over 1600 fpm. is much greater due to the large volume of water we have to handle on the wire in forming a kraft sheet. These large volumes are necessary to keep the fibers suspended during the flow from fan pump to slice lip. If the headbox has fulfilled its mission of dispersing fibers in the water across the width of the machine, the next step is to remove this water as quickly as possible, consistent with the character of the sheet to be formed. Most machines, and particularly those in higher speed ranges, use some type of forming board placed as close to the breast roll as possible. The forming board, adjusted to the underside of the wire, serves the purposes of uniformly scraping water from the wire, and of supporting the wire at a point where the weight of water is heaviest. We have also been using a special type deflector between the first 3 or 4 table rolls after the forming board to keep the sheet from raising on the wire as it leaves the slice lip. This deflector is approximately two inches wide at the tact with it.

In the past few years there has been a tendency toward the use of 12 or 14 in. wide suction boxes for high speeds. It is my opinion this is not necessary. If the first three, which are the wet boxes, are large enough to take care of the volume of water, then the balance of the dry boxes could be 6 or 8 in. wide. In the suction box section the wire receives its greatest punishment. This can be eliminated in some degree by the proper adjustment of several boxes, or better still, install automatic vacuum control

(Continued on Page 79)

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**IMPROVE
cockle conditions**

Many a mill has found that the porosity of ASTENS and the way they "hug" the dryers tends to reduce cockling. Just another advantage that makes for . . .

Economy in the long run

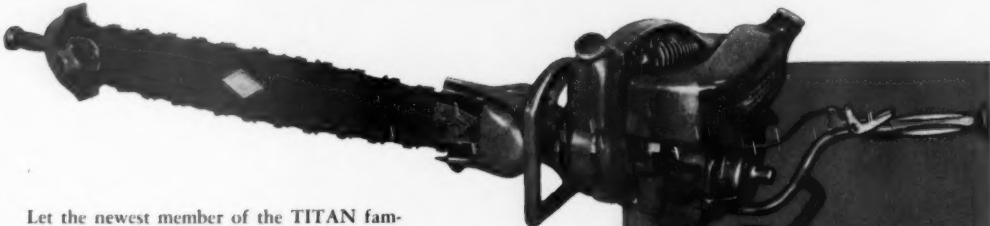
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Let the newest member of the TITAN family of power chain saws—the new, fast-working TITAN Series 60—help you keep ahead on your production schedules. Operating as a two-man or one-man saw, the TITAN Series 60 is ready to tackle any job in the woods—fell trees, buck, limb, square timbers. The new TITAN Series 60 has all those family characteristics for which the complete TITAN line has so long been famous. It's compact, balanced, protected—easy to carry—a smooth operator under all conditions. It's lightweight—weighs only 37 pounds complete with 26" bar and chain—delivers more power per pound. Your TITAN Series 60 can be equipped with straight blade bars from 26" to 60" or with a 19" capacity bow saw.

There's a TITAN power chain saw to fit your wood-cutting operation. Try TITAN once—you'll use it always and ALL WAYS.

Ask your dealer for a TITAN demonstration today.

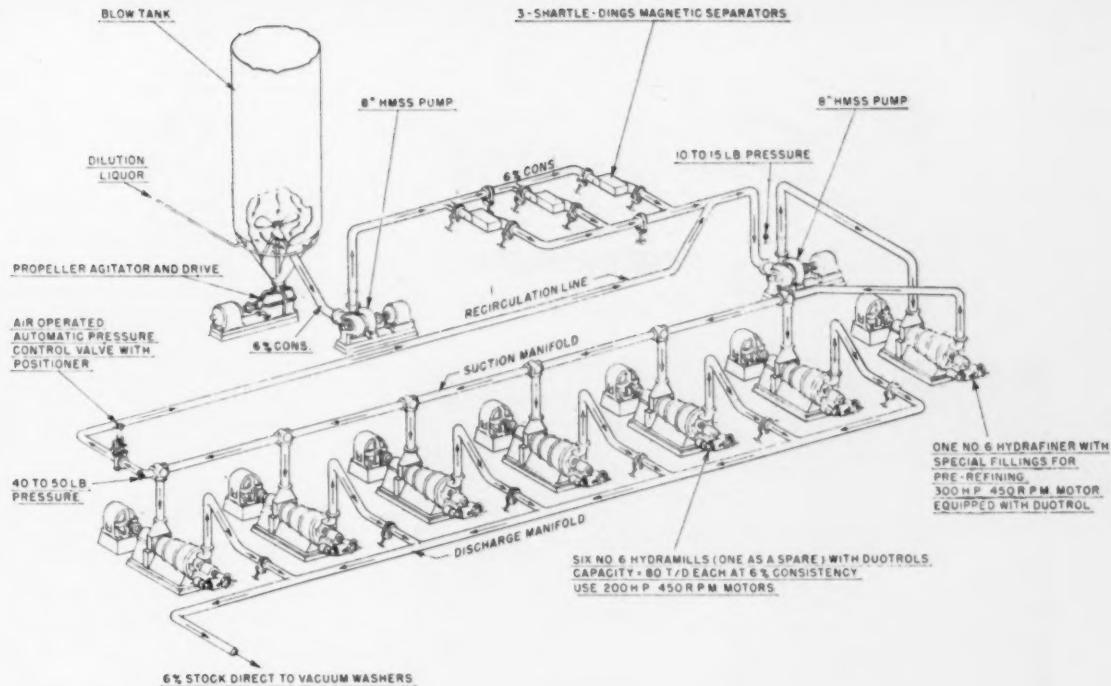


TITAN CHAIN SAWS, Inc.
SEATTLE 4, WASHINGTON

TITAN One-Twenty two-man saw—
12 h. p. for big timber.

TITAN offers you the complete line of power chain saws, attachments and accessories.





400 TON PER DAY PRE-REFINING SYSTEM FOR KRAFT

(Continued from Page 76)
valves to hold the vacuum at any determined setting.

We are now at the couch roll, which in my estimation is the most critical spot we have, at least this is where the major portion of our breaks occur. This has been one of our main sources of trouble in speeds over 1500 fpm. due to sticking conditions.

When we started to think of these higher speeds our first thought was that we would need wider suction areas in the couch roll, and did build some rolls with areas up to 21 inches wide. In the past year or so we have found it is more practical to use a narrow suction area in the couch roll with very high vacuum for high speeds.

In a careful check of wire performance we have found that by using a closer mesh wire this sticking condition is cut down to a minimum. We are at present using 66 x 44 mesh wires.

There seems no immediate problem in the press sections, providing all rolls are kept in good shape and to proper crown, and proper type felts are used. Arrangement of the press section should be as simple as possible in methods of control and facilities necessary in changing felts. The use of hydraulic and pneumatic means of loading offers an advantage over mechanical loading due to the positive control of nip pressures, which is very essential.

In general make-up the dryer sections have changed less than any other part of the machine. But increase in drying rates indicates a great amount of study has been devoted to ventilation and water removal. In some cases high steam pressures are permissible where high temperature drying is not detrimental to the sheet. However, best results are obtained usually by low temperature drying. One of the main troubles we feel is breaks that occur in the first few dryers of the first section come from the paper web being injured as it leaves the couch roll and due to efficiency of the straight away press sections the web does not completely part until getting into the dryers.

From the dryer section through the winder there does not seem to be any immediate problem in reaching higher speeds.

McDermott Returns from Florida

John McDermott, paper mill supt., St. Regis, Tacoma, Wash., has recently spent some time at Jacksonville, Fla., in advisory work in connection with the new paper mill being built there by St. Regis.

HOT STOCK REFINING IN KRAFT MILL

By Gordon Petrie
Black-Clawson-Shartle-Dilts Co., Portland, Ore.

(Some high points of paper given at Supts. Convention)

With increasing pulp demands and rapidly decreasing wood supplies, mills everywhere are faced with higher wood costs demanding that everything possible be done to economically give a higher pulp yield. It is our feeling that our "pretreatment equipment" is at least a part of the answer to this problem.

We have installed in a modern sulfate pulp mill, prefining machinery to obtain maximum wood yield and greater fiber strength development. The stock with hot liquor, blown from the digester, is mechanically treated prior to washing stages. Our equipment has reduced cook time and chemical costs to more than justify the hp. cost and capital investment. Pretreatment machinery must uniformly prepare fibers for the washing stages, but not "prepare" objectionable material.

One advantage of the Shartle pressure-type hot stock refining installation is the completely enclosed system which eliminates any foam troubles. Another is ability of the conical refiner to hold its plug setting constant which contributes greatly to exceptionally long filling life.

For pretreatment we have developed the No. 6 Hydramill filling. With the special conical plug and shell filling design, it has been noted that greater clearance between the bar faces can be maintained and still obtain desired results. This factor contributes greatly to the lower maintenance cost in replacement of liners and lower hp. requirements.

The complete installation starts with blow tank agitator and goes to the first washer including pumps, valving and magnetic separators. A typical 400-ton per day system would require six No. 6 Hydramill refining units and one standard No. 6 Hydrafiner, prebreaker or the unit which would reduce the larger particles from the blow tank to such a size that they would readily enter the smaller working area of the Hydramills.

In system, stock is cooked to a higher than usual permanganate number and is pumped after dilution to 6% in the blow tank through magnetic separators at approximately 15 lbs. pressure. Then by means of a booster pump the stock is pumped at about 60 lbs. pressure through the No. 6 Hydrafiner equipped with out standard cast chrome filling. The succeeding six No. 6 Hydramills are connected in parallel. To obtain uniform pressure within all refiners and to obtain most uniform treatment, the inlet manifold of the six Hydramills only is arranged with a bypass or recirculating line, returning to the suction of the booster pump. This return line is equipped with an air operated automatic positioner valve. We recommend six Hydramills with one as a standby in case of breakdown and as a refining spare in case of pulp troubles. The extra refiner can be thrown into the line to maintain maximum tonnage when wood variations not corrected in the cook require more mechanical work. The refined stock is discharged into a common manifold leading



Engineered TO EXACT JOB REQUIREMENTS

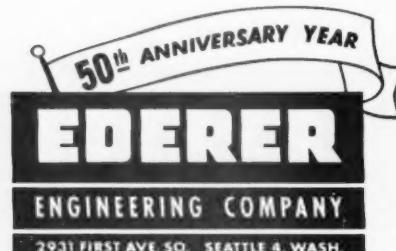
EDERER • • • • • CRANES

This 24-ton two-trolley machine room crane was designed to the exact job requirements of one of the largest pulp and paper mills in the West. It is just one of many EDERER cranes engineered and built for the pulp and paper industry.

EDERER, through many years of working with the industry, has developed roll handling and roll storage cranes, canting cranes, heavy duty stand-by cranes, cranes requiring extremely low head room and extra high lift

cranes—all engineered to the exact job requirements—affording more efficient, more economical materials handling.

An EDERER engineer will be glad to discuss your special job requirements.



EXPORT DIVISION
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SAN FRANCISCO 11, CALIF.

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to the washing stages and the stock at no time has had a chance to absorb air in this closed system.

Each Hydramill, as well as the one Hydrafiner, is equipped with Duotrol plug adjustment assuring uniform treatment. The Duotrol holds the plug of the refiner constant at a predetermined setting to eliminate the necessity of an operator continually adjusting the plugs. From a single centrally located control panel the operator can make plug adjustments of all machines to suit requirements.

Even though the Hydramills have 1200 hp. connected, the units will operate under full load at about 168 hp. each. In calculating hp. per ton per day requirements, the prebreaking Hydrafiner is not considered as additional hp. because it is our feeling that it, or a similar machine, is required for all such systems. Nor is the sixth (standby) Hydramill figured in the calculation. By actual field test we have determined that our installation is using 2.1 hp. per ton per day.

PAPER'S PLACE IN U. S. ECONOMY

By Louis T. Stevenson

American Paper and Pulp Assn.

(Highlights of his paper presented at the Supts. Convention)

The paper and board industry ranks as the sixth largest industry in the U.S., ranked by value of product. Ahead of it, according to the U.S. Bureau of the Census, come motor vehicles, meat packing, steel works, petroleum refining, and cotton broad woven fabrics. This ranking was established by the bureau in a tabulation which eliminated duplications such as would arise by including with paper and board the pulp industry and the converted paper products industries.

Just where does paper and board fit into the American economic picture? The answer is everywhere! There is not a farm, factory, business, railroad or other transportation system that can operate without paper. Its use is essential to operation of our governments; to banking; to our systems of communication; of distribution; and above all, to our armed services which, during the last war, listed over 700,000 uses for paper. In 1944, Donald Nelson, head of the War Production Board, stated that the paper and pulp industry was one of the most essential of all industries.

The first use of paper by man was as a medium on which to transmit and record ideas or facts. It is not too much to say that our western civilization was born on paper records and is disseminated through the use of the printed word. It is estimated that over 10,000,000 tons of paper were required in the U.S. during 1950 to record and transmit ideas. This includes imported newsprint.

One of the fastest growing fields for paper and board is packaging. The advent of the paper shipping sack, both single and multiwall, has greatly expanded the use of kraft paper in that field. Research into application of sulfite wrappings, glassine, greaseproof and vegetable parchment, has widened use of these papers. Over 13,500,000 tons were used during 1950 in packaging U.S. products.

It has been proved conclusively that when paper or board comes off the machine it is a perfect sanitary product—there are no coliform bacteria present. Paper is, because of low cost and disposability, "a natural" for sanitary purposes. Paper napkins, facial tissues, milk bottles and bottle caps, ice cream containers, frozen food containers and wrappers are ex-

amples of many applications. Of these papers—approximately 1,500,000 tons were consumed in 1950.

Papermaking is a mass production industry, generally located in small communities, and using large volumes of process water. Its power requirements are great. The net result is the economic stimulation of many small communities. Woodpulp mills are dependent for their raw materials upon forest resources. The mills also require huge long term capital investments. As a consequence the careful plant management must assure itself of adequate forest resources and consequently the pulp industry is and has been in the forefront of developments to assure permanent wood supplies.

The primary paper industry in the U.S. will be able to produce over six billion dollars worth of goods this year. Employment in the industry is running at 205,000, exclusive of woods workers and salaried individuals. Present annual payroll will approximate \$765,000,000. All told, including woods workers, about 500,000 are employed.

Directly dependent upon the paper are the printing and publishing industry, and manufacturers of converted products. Between these two industry groups and the pulp and paper industry, over a million people are employed, drawing about \$3,400,000,000 annual pay. In addition, an almost immeasurable army is engaged in distribution and use of paper.

During the past ten years the paper industry has come to be considered by the investing public as an industry in which satisfactory in-

vestments can be made. The paper industry earnings record, taken as an industry, will stand up with "all industry" earnings in depression as in prosperity. The paper industry has operated more steadily in depression than most industries. In the low year (1932), the paper industry was operating at 58% of capacity, while steel was almost flat on its back below 20% and

banks dependent upon the automobile industry were in distress.

The paper industry is, of course, a service industry, and it therefore is dependent upon general business activity. But it must be remembered that whatever business is done demands use of paper. Business can not be done without paper!

DISK MILLS IN STOCK PREPARATION

By Lee E. Eberhardt

The Bauer Bros. Co., Springfield, O.

Recent years have seen increasing acceptance of disk mills in stock preparation due to the following reasons:

1. Mills have found that traditional equipment is inadequate to efficiently produce paper and board of a quality demanded by the trade during a transition period in which there is a continual quality degradation of pulp and waste paper available.

2. Mills have seen the trend in other efficient industries toward continuous processing that eliminates inefficiencies of batch systems.

3. They have found that the disk mill provides certain pulp qualities and unique effects in addition to strength development that are desirable.

Disk mills are manufactured in a variety of sizes. Current models of single disk mills vary in size from 8 to 48 in. disk diameters with

applied horsepower ranges from 5 to 600 hp. Double disk mills range from 24 to 40 in. disk diameter with 50 to 600 hp. The above figures are in no way limits in either design or capacity. The future will undoubtedly provide larger diameter mills with higher available connected hp.

Several generalizations based on actual applications and studies of refining characteristics of the two types of disk mills can be made.

1. Slow speed single disk mills do more mulen strength development with less defibrering or deshiving than high speed single or double disk mills at the same hp. per ton power input.

2. High speed single disk mills, equipped with proper tackle do an excellent job of reducing size of coarse aggregates such as: Bull screen rejects, baled straw, chip screen rejects, etc.

3. Double disk mills in one pass through the

- Washes lime mud to less than 1% soda content
- 55% to 60% solids in the washed mud
- Sturdy, stainless-protected construction
- Practically automatic in operation
- Extremely low maintenance cost

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machine defiberize uniformly and completely such materials as cooked chips, uncooked chips, and screen rejects.

4. Double disk mills completely fiberize and disperse fibers in pulp suspensions such as breaker beater stock of pulp lap or waste papers.

5. Double disk mills resemble colloid mills in their dispersing action. In this respect they are used to: (a) Disperse pitch and friable dirt in pulps. (b) Breakdown and disperse ink aggregates such as ink balls in deinking applications. (c) To intimately mix dyes, etc., in pulp suspensions. (d) To disperse carbon black and compounds in rubber latex.

Any selection of refiners and any recommendation of optimum conditions for the use of that refiner, must be predicated upon actual experience with a commercial sized machine. There are a great many controllable factors in both the design and operation of revolving disk mills. Among the principal variables are (1) the number of rotating disks (one or two), (2) rate of power application, (3) speed of rotation, (4) consistency of feed, (5) pattern of fiberizing plates, (6) distance between the plates, and (7) precision of construction.

Fortunately revolving disk mills lend themselves well to a study of their refining action with small quantities of raw material. The

Bauer Bros. Co. together with several other equipment manufacturers maintain the Fiber-Products Laboratory at Springfield, Ohio, for the purpose of conducting semi-commercial tests and investigations on pulp and papermaking fiber using full size commercial machines. Mills are invited to make use of this laboratory.

Disk mills can be used and are being used in preparing a variety of pulps for paper and paperboards. In the paperboard field, the working of waste papers is of primary importance.

DESIGN OF CYLINDER MACHINE VATS

By Philip H. Goldsmith
The Pusey & Jones Corp., Wilmington, Del.

(Talk before Board Group Meeting at 1951 Convention of Superintendents' Association)

Four different types of vats must be considered today. They are the counterflow vat, the direct flow vat with a fixed circle, the direct-flow vat with an adjustable-circle (the Stream-Flow Vat) and the last named with a vacuum cylinder mold. Each of these has its place in the industry.

In order to be correctly designed, vats of any one of these four types must conform to certain

tance both from the standpoint of defibering and deinking.

In the field of deinking of waste papers, disk mills have found excellent acceptance. The refining characteristics previously outlined have provided a means of reducing steam, chemical and time requirements in deinking while producing a cleaner sheet.

In typical deinking system, disk refiners are being used in two positions: Directly following the initial disintegration or cooking step and just ahead of the bleach system.

basic principles. Formation of a sheet of paper by depositing fibers suspended in water is a drainage operation. There must be sufficient drainage capacity to insure a consistency low enough for good fiber dispersion. Drainage capacity can be increased by going to larger cylinder molds, by using more of them, or by increasing the drainage capacity per sq. ft. drainage surface by utilizing vacuum cylinder molds.

Increased drainage immediately presents difficulties in securing a smooth approach flow and an ordinary straight-sided hopper with enlarging area does not produce an even distribution of flow across the width of the machine. It is necessary to use progressively reducing areas in order to produce good spreading of the flow, the latter is the principle of the patented Goldsmith Flow-Spreaders. The greater the flow for which the vat is to be designed the more carefully must the flow spreader be proportioned. For very large quantities of flow, three-pass flow spreaders are recommended. For smaller flow quantities, single-pass flow spreaders are considered suitable and are much lower in cost. The flow around the cylinder mold can only be effectively controlled in a direct-flow adjustable-circle vat of the Goldsmith Stream-Flow type. Fixed-circle counterflow vats should permit very wide circle clearances, so they can be built in and changed to suit experience in actual operation.

There are definite centrifugal speed limits in the operation of cylinder molds depending upon the diameter of the cylinder molds and the nature of the stock. Fans drawing large volumes of air from conventional cylinder molds can produce only very small degrees of vacuum and while helpful are of only minor assistance. Speeds of operation much beyond 600 fpm. are not practical on cylinder board machines except with a cylinder mold which will permit very substantial vacuums of the order from 2 to 8 in. of mercury. These molds not only overcome the centrifugal obstacles, but also permit the forming of a heavier sheet on a single cylinder. In addition, they counteract crushing at the couch and keep the felts clean. Due to greater drainage, they reduce the consistency for a given type of stock, weight of sheet and speed.

Recent design improvements of Stream-Flow Vats and Flow Spreaders have been in the direction of stainless steel flow surfaces with mild steel stiffening flanges, and in the simplification of designs for the purpose of saving cost. A Stream-Flow vat of the most modern design today costs less than twice the amount of a fixed circle direct flow vat of similar materials. A single pass Goldsmith Flow Spreader is today comparable in cost with other types of flow distributors, but the latter have not proven as effective in practice. The cost of the vacuum cylinder molds has also been reduced but must, of course, be compared with suction rolls of very large diameters.

The counter flow type of vat is recommended for pulp wet-lapping machines and in all cases where quality of formation is of no importance. In the case of low tonnage board machines operating at low speeds fixed circle direct flow vats can be used for the top liner, the under liner and the back liner, with counter flow vats for the filler positions. For a high production, high quality folding boxboard machine, all vats should be direct flow adjustable circle type with vacuum cylinder molds used in the filler vats thereby reducing the number of filler

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vats required. High speed test liner and corrugated board machines should be equipped with vacuum cylinder molds in direct-flow adjustable-circle vats in order to operate successfully at speeds beyond the previous centrifugal barriers.

PULPS FOR SPECIALTY PAPER MILL

By Jack V. Savage

Sulfite Supt., Crown Zellerbach Corp., Camas, Wash.

(Highlights of his paper at Supts. Convention)

The phrase, specialty mill, is a term used very loosely. In our case at Camas, it means you name it and we'll make it if our production schedule will permit the time. At last count there were 623 grades of paper that had been made during the previous 12 months. Obviously we don't make 623 kinds of pulp, but we do make 20 pulp grades which can be furnished on a 24-hour-notice basis, either from one of our 40 stock chests or from lapped pulp storage.

Experience has proven much can be gained in paper machine speed, stock preparation power, and less stock preparation equipment is needed when desired paper characteristics are taken into account in the pulp mills, as well as in beater room and on paper machines.

The 20 different grades are made up of pulp which has been cooked differently in the digesters or handled differently in bleach plant, and sometimes a combination of both. They also include kraft and groundwood. We also have seven wood species and varying percentage mixtures of these.

There are five basic quality factors that can be influenced by the pulp mills. They are: Strength, softness, printability, stainproofness, and color. The 20 grades include degrees of these five factors.

An example of how pulp quality affects paper quality may be found in one of our wrapping tissue grades requiring a high tensile strength. If excessive beating is required to develop the necessary strength, the resulting freeness drop will slow down the paper machine and will cause a tiny characteristic in the tissue sheet.

We have found by maintaining a proper acid strength and by following a cooking curve with a very rapid rise, then blowing to a rather

Hanna Representative

Hanna Engineering Works has appointed the Industrial Air & Hydraulic Equipment Co., 13306 Kercheval Ave., Detroit, an exclusive sales representative of Hanna products in Michigan.

A combination of paper grades is scheduled that will utilize each of the 14 paper machines and one pulp dryer to best advantage, and at the same time use all of our pulping equipment to its full capacity. This schedule is turned over to one man who breaks it down into individual pulp grades. On a form sheet he indicates the time of day the various grades of pulp will be needed, in what chests grades should be put, the number of lbs. per hour that will be used, and total number of tons required.

In order to avoid the inevitable errors of "too many fingers in the pie," this same man breaks down the pulp supply schedule even further by actually scheduling the exact time of day for starting each cook and what grade it is to be. He also indicates exactly when a grade change is to be started in the bleach plants and at what tonnage rate of production. This information is posted in the foremen's office and at various production points for guidance.

Occasionally the schedule does not work out as planned due to the thousands of things that can go wrong around a large mill. Latest disconcerting assignment was the directive to cut our sulfur usage. This has introduced more problems.

Chip Packing Cuts Sulfur

We have chosen chip packing as the best all-around solution. To date we have reduced sulfur usage 35 lbs. per A.D. ton of pulp. This was accomplished by raising the yield of pulp per cu. ft. of digester space from 4.56 to 5.0 lbs. A.D. A Babcock & Wilcox mechanical packer was used to increase the amount of chips charged into the digester. We expect to go further in chip packing, perhaps approaching 6 lbs. per cu. ft. of digester space.

PAPER MACHINE MAINTENANCE

By Richard P. Wollenberg

Chief of Engineering Division, Longview Fibre Co.

(Address at Supts. Convention in
Portland, Ore.)

In our mill we have long had the policy that maintenance is the responsibility of the operating departments. By that we mean that the paper mill superintendent, and in turn the papermakers are responsible for reporting bad

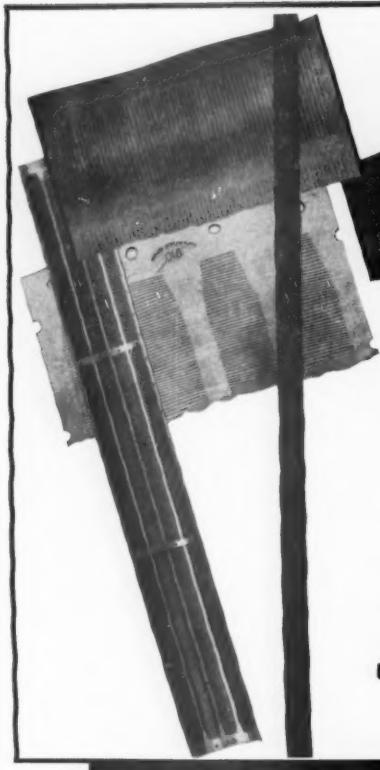
order equipment even though the actual repair work will be done by the mechanical department. We feel that the man who operates a piece of equipment has the best chance to observe difficulties, and that he should not be allowed to depend on someone else who is not

(Continued on Page 86)

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(Published June, 1951)

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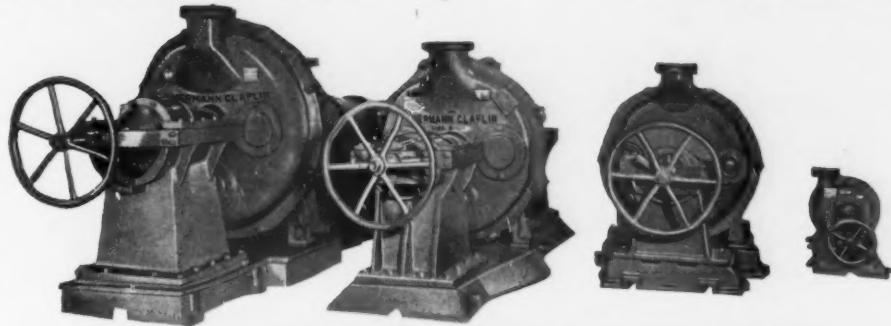
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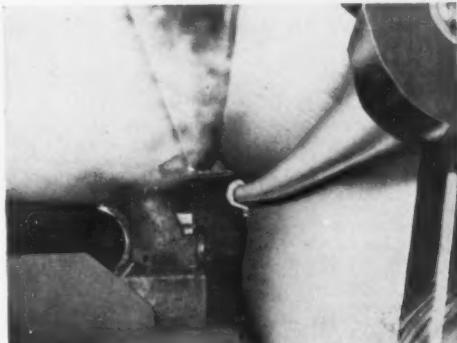
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POSITION WANTED

MECHANICAL ENGINEER, licensed, 15 years industrial and development experience, with two years in pulp and paper. Administrative background, qualified to assume position of responsibility. Desires connection in construction, operation, or technical sales. Age 38. Please reply to P&P Box No. 96, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

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ages 26 and 31, seek suitable situations in USA. Currently employed good positions in leading Norwegian sawmill and wallboard mill. Technical and business training. Good references. Write Box No. 6445 A/S Hoydahl Ohme, Oslo, Norway.

Quebec Political Move

Although U. S. Price Stabilizer Michael D. Salle and almost everyone else appears to accept the recent hike in newsprint price as a fact, Quebec Premier Maurice Duplessis is moving independently in the hope that Quebec newsprint manufacturers will make a special price for his province.

It was not expected that much would come of it, but Duplessis called a meeting for July 11 at which he intended to ask for special concessions in view of the fact that many of the 17 newsprint mills in Quebec obtain their pulpwood from lands leased from the government.

Quebec's newsprint mills produce 51% of Canada's output.

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Long established middle west manufacturer of specialty equipment for pulp and paper mill wishes to engage services of man who has knowledge of mill operation. Prefer man who has been selling in Middle West and New England mills but will also consider others possessing suitable personality, education, and mill experience background who are interested in a position where initiative and aggressiveness will pay off in a growing business. Work will consist of traveling about four months of the year with balance of time devoted to working in home office handling correspondence with customers. Applicants should state age, education, marital status, and complete experience background in first letter. Write P&P Box 97, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

WANTED

Supervisor for pulp and paper research group of 6 to 8 men in laboratory of upper midwest mfg. of bleached and unbleached groundwood, sulphite and kraft pulps and printing and converting papers. Must be a graduate chemist or chemical engineer well grounded in paper chemistry and manufacturing processes. Prefer man 35 to 45 years old with both production and development experience in above fields and a combination of a creative imagination with a practical approach to development problems. Paper coating experience desirable. In reply give personal history, training, experience and salary expected. Please reply to P&P Box No. 95, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

WOLLENBERG'S PAPER

(Continued from Page 83)

constantly at the machine for running inspections.

However, we find that there are many pieces of equipment that require more detailed periodic inspections than the operators are able to make. To take care of some of these items we provide daily inspections by mechanics of, for example, the oil circulating systems. Where inspection, less frequently than daily is required, we use a maintenance tickler card system. If a piece of equipment requires monthly inspection, for example, we make out twelve cards at the beginning of the year, and send one out each month. If the equipment can be inspected during regular operations the tickler card goes to the Mechanical Foreman concerned who has a mechanic make an inspection and notes the results on the card. (Each card carries any detailed instructions needed.) The completed card goes then to the mechanical superintendent, the operating superintendent, the maintenance engineer and back to the file. If a card does not come back to the file on schedule, a follow-up is sent. When a tickler requires a scheduled shutdown it goes first to the operating superintendent who holds it until he can arrange a shutdown, and then passes it to the foreman concerned.

The third technique we have found necessary is the publication of a shutdown work list for each wire change on a Fourdrinier or bottom felt change on a cylinder machine. The work list is originated in the paper mill superintendent's office, and sent to the engineering office where any items known to that office which were missed, are added. The list is then duplicated and sent to all trades concerned. Also shown are the time of shutdown and start up, and any routine inspections to be made. Each foreman will mark up his list after the shutdown showing what was done, and this information is collected by the engineering office and sent to the paper mill superintendent to serve as a starting point for the list for the next shutdown.

The engineering office also keeps and publishes a list for each machine showing the work orders which are outstanding covering alterations and major maintenance. When a scheduled shutdown is near, the appropriate list is reviewed to see how long the shutdown should be, and what major work should be included. If it is known that a dryer bearing must be changed which will extend a wire change to eight hours, several modification orders may be added to the work list. If we have to grind and clean a suction press we always consider doing belt replacement in the same shutdown.

Another policy we find that contributes to minimum outage is the generous provision of spares. A spare rotating assembly for a fan pump will go in quicker than the assembly in the pump can be pulled and repaired. If a gear has a loose fit it is faster to put in a new gear and rebush the old one for future use.

We also find something that seems odd. The more a machine runs, the less maintenance it takes. A protracted shutdown, as over a holiday, seems to bring out every weakness in the machine upon start-up. Bearings on intermittently operated equipment do not seem to last as long as bearings on continuously operated machines. If, as happened a while back, we shut down for a few Sundays because of business conditions our maintenance jumps.

To sum up I would say don't worry about keeping your machines in tiptop condition, just try to keep them running all the time.

New Converting Plant

Pacific Mills, Ltd., announces plans for a new converting plant and office in Coal Harbor, Vancouver, B. C. Barges carrying pulp and paper from Ocean Falls will deliver direct to the new plant.

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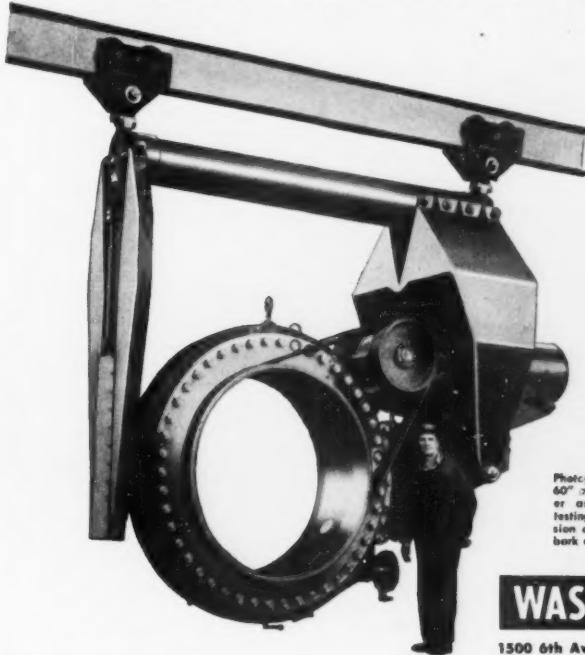
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Photograph shows newest 60" model of Hansel barker assembled for final testing. Overhead suspension construction simplifies bark disposal.



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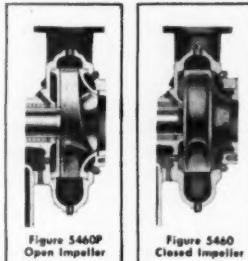


Figure 5460P
Open Impeller

Figure 5460
Closed Impeller

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Seven samples in one set are products resulting from disk-milled knotter and fine screen rejects.

Five samples in another set are swatches made from sulphite pulp refined in disk mills for newsprint.

Eight samples in the third set are swatches of paper made from disk-refined screened sulphite.

Not only are the samples interesting in themselves, but they are illustrative of data on freeness, mullen test, tear test, power consumption, and tonnage capacity. Information on high-yield sulphite pulp is also included.

Now, of course, there's considerable work connected with collating "The Bauer Story on Sulphite." So we don't wish to send copies out to people who are merely curious; but we'll be glad to send a copy, upon request, to anyone who is actively engaged in the production of sulphite pulp or paper. Be sure to ask for a copy if you qualify.

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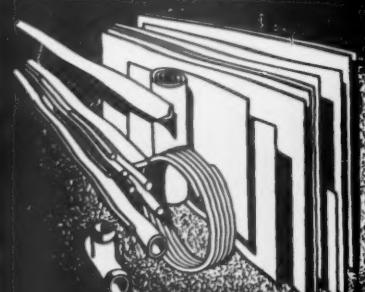
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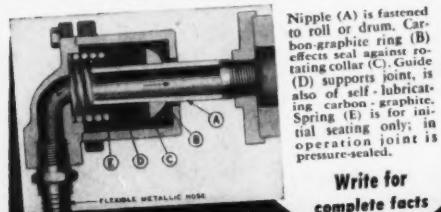
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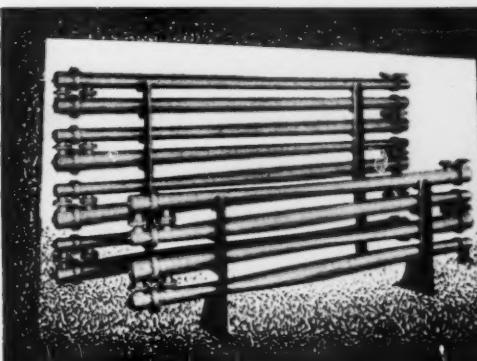
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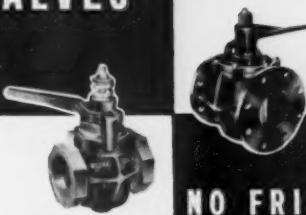
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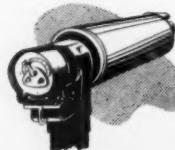
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BEGINNING with the fundamentals of the properties and composition of wood pulp, this volume is the necessary step in preparation and treatment of wood pulp. It supplies a thorough coverage of everything that happens from the time the wood reaches the mill through the mill point at which it is turned over to the groundwood mill in the form of pulp in closed blocks. This is delivered to the chemical-pulp mill in the form of screened chips. It explains all the operations, equipment, theories, data, etc., concerned in the manufacture of chemical pulp, sulfite, and alkaline processes. Besides putting up in detail the bleaching of both mechanical and chemical pulp, this volume gives many tests for evaluating the chemical and physical properties of wood pulp.



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1. Structure and Properties of Pulp-wood
Structural, Microscopic, and Physical Properties of Wood
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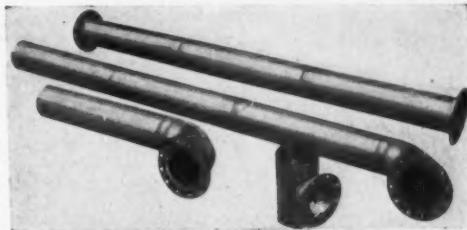
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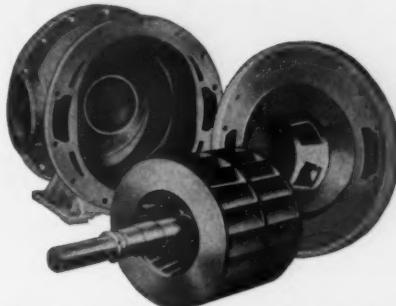
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